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FROM THE U. S. NAVAL OBSERVATORY.

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ASTRONOMICAL

AND

METEOROLOGICAL OBSERVATIONS

MADE AT

THE UNITED STATES NAVAL OBSERVATORY,

DURING

THE YEAR 1861.

PUBLISHED BY AUTHORITY FROM

THE HON. SECRETARY OF THE NAVY.

COMMANDER J. M. GILLISS, U. S. N., SUPERINTENDENT.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1862.

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NOTICE.

On taking charge of this establishment, at the close of April last, I found that the following observations, made prior to the 1st of January, 1861, had not been prepared for the press, though considerable progress had been made in the reduction of the Mural Circle and Equatorial Observations:

Transit Instrument, 1851—1860, both inclusive.
Mural Circle, do. do.
Meridian Circle, do. do.
Equatorial, do. do.
Zone Observations, 1846—1851.
Magnetical observations with Declinometer, Vertical Force Instrument, and Dip Circle, from July, 1842, to October, 1844.
Meteorological observations from July, 1842, to December, 1860.

The zone and magnetical observations were discontinued at the dates last named for each, and the Magnetical Instruments were never mounted after their removal from the building formerly occupied near Georgetown.

It being physically impossible for the small corps of observers to compute their current observations and prepare this mass of work for printing within any reasonable period, a proposition was submitted to Hon. Gideon Welles, Secretary of the Navy, for authority to place the astronomical portion in charge of a competent astronomer not connected with the Observatory. Appreciating the fact that early publication measurably enhances the value of observations, the Hon. Secretary recommended the measure to the favorable consideration of Congress; and the necessary authority having been granted by that honorable body, a corps of copyists was at once employed to transcribe, on properly-ruled forms, all the observations contained in the record books.

On the 9th of October, 1861, a contract was entered into with Dr. B. A. Gould to make the necessary computations for these sheets and return them ready for the printer within two and a half years. The original observations were not permitted to leave the establishment; but every record which related in any manner to the instruments, their adjustments, or the observations, was fairly transcribed for Dr. Gould, who subsequently made a visit to Washington for personal examination of these documents. The ability of this astronomer will insure for the observations the best results of which they are susceptible.

The progress already made in the computations secures the publication of a volume immediately after the present one can be passed through the press. After the copyists shall have completed the zone sheets, they will be employed in reducing the magnetical and meteorological observations; and should no unforeseen event occur to cause delay, the whole of the observations will be presented to the public within three years.

Commencing with the year 1861, it is designed that the meteorological observations shall constitute part of each annual volume.

J. M. GILLISS.

U. S NAVAL OBSERVATORY AND HYDROGRAPHICAL OFFICE, *February*, 1862.

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INTRODUCTION.

In August, 1842, a law was enacted authorizing the erection of a "Depôt of Charts and Instruments," and the building was completed in September, 1844. In December of 1854 the honorable Secretary of the Navy directed that it should thereafter be styled the "U. S. Naval Observatory and Hydrographical Office."

The enacting law authorized the President of the United States to locate the building upon any public ground within the District of Columbia not otherwise in use; and the site assigned by him is the square originally designed in the plan of the city of Washington for a National University. It is on the north bank of the river Potomac, in the southwestern part of the city, and contains about seventeen acres. It is enclosed on the east, south, and west sides by a brick wall, and on the north by a picket fence.

The Observatory buildings consist of a central edifice fifty feet square, with wings to the east, west, and south. The central building is two stories and a basement high, with a parapet and balustrade of wood around the top, and is surmounted by a revolving dome twenty-three feet in diameter, which rests on a circular wall that is built to a height of seven feet above the highest part of the roof. The east and west wings are each twenty-six feet six inches long, twenty-one feet wide, and eighteen feet high. The south wing is separated from the main building by a passage-way ten feet square. It is twenty-one feet long and of the same breadth and height as the others. For the accommodation of a circle in the Prime Vertical, this wing was, in 1846, extended twenty feet, the width and height of the new being the same as those of the old portion. The circles of the instrument ordered for it having been injured,* it was returned to the makers in 1847, but was not remounted after its second arrival in Washington until June last. Examination proving that its design is radically defective, it was then repacked, to be disposed of hereafter.

During the year 1847 a dwelling for the Superintendent was erected immediately east of the Observatory; and in the following year the east wing was extended twenty-four feet, so as to connect it with the former building. The room thus added is used for the chronometers and other instruments belonging to the Navy.

From a calculation of the observations made in 1845–'46, the latitude of the Observatory is 38° 53′ 39″.25 North. A later investigation indicated that no greater correction than 0″.25 was to be anticipated.† The more recent observations have not been discussed for this object.

The longitude used in the reductions of the observations made during the year 1861 is *5h.* 8*m.* 11*s.*0 West of Greenwich. This has been derived from the adopted longitude of Cambridge, Mass.,‡ (4*h.* 44*m.* 29*s.*5,) and the differences of longitude between that and the Washington Observatory, (23*m.* 41*s.*54,) ascertained by means of the electro-magnetic telegraph.§ A discussion of the moon-culminations, occultations and eclipses, observed for an independent astronomical determination of the longitude is, as yet, a desideratum.

A comparison of the moon-culminations, observed at the old observatory, on Capitol hill, between September, 1838, and July, 1842, with corresponding observations at European stations, places the former establishment in longitude 5*h.* 8*m.* 0*s.*00.‖ That observatory was 0*s.*13 west from the dome of the Capitol,¶

* Introduction, vol. III, p. ii.

† Introduction, vol. IV, p. I.

‡ Report of the Superintendent U. S. Coast Survey for 1857, p. 266.

§ American Ephemeris and Nautical Almanac 1863, p. 475.

‖ Transactions Am. Phil. Soc., vol. X. (New series.)

¶ Astronomical observations made at the Naval Observatory, Washington, under orders of the Hon. Secretary of the Navy, dated August 13, 1838. Published by order of the Senate of the United States, 1846.

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which, by trigonometrical determination of the United States Coast Survey, is 10*s*.17* east from the present Naval Observatory. From these sources the longitude is 5*h*. 8*m*. 10*s*.04, and the probable error less than would be derived from a discussion of the smaller number of observations accumulated since 1845.

There are four rooms on each floor of the central building. One is occupied as a library room and office for the Superintendent; two are filled with charts, properly arranged, for distribution to ships of the navy; and the remainder, on the first and second floors, are assigned to the assistants.

A standard clock, by Kessel, is mounted in the office of the Superintendent.

One room of the basement has been fitted as a workshop for the machinist; instruments returned from ships and needing repairs are temporarily placed in a second one, and the other two are used for storerooms. All of them, together with the separating halls, are heated by iron pipes, through which hot water circulates from a boiler under the residence of the Superintendent.

The Meridian Transit Instrument is in the west wing. It has an object-glass of 5.3 inches diameter, with a focal length of 86 inches, and an axis 42 inches long between the bearing points of its pivots. It was made by Ertel & Son, of Munich, and is mounted on monoliths of granite split from the same block, and which are wholly isolated from the floors and building.

There are two clocks at present in this room. The one in use was made by Parkinson & Frodsham for the old Naval Observatory, and is supported by wood clamps to a granite pier south and east of the Transit Instrument. It has Graham's dead-beat escapement, with jewelled pallets and mercurial compensation pendulum, the usual means for altering the length of the rod and putting it in beat, and an index attached to the base of the stirrup that supports the mercurial cylinder, which indicates the arc of vibration upon a divided scale secured to the back of the case. Its rate has not been entirely satisfactory, owing in part to over compensation. Its pendulum index has been wrought to a delicate knife edge, which, at every vibration, passes through a globule of mercury supported on a slender bracket projecting from the divided scale. There are wires leading to a galvanic battery and register for the record of observations upon a Morse fillet.

The other clock was designed by Dr. Locke, made by Messrs. Howard & Davis, and put up in 1850. It is described in the volume for 1846. It is secured to the west face of the pier originally erected for the Mural Circle.

The Mural Circle is in the east wing. It is five feet in diameter, and is mounted upon the east face of a sand-stone pier. It has a conical axis three feet long, with friction rollers under the eastern end connected with rods which pass between the circle and face of the pier, and thence over the top to counterpoises within a cavity of the pier.

The circle and radial bars, twelve in number, are part of the same casting. The latter are strengthened on their backs by edge bars, and united midway by a second concentric circle. It is divided into 5′ spaces upon a band of gold, inlaid upon the rim perpendicular to its plane, and into whole degrees upon a platina band near the gold one. Each of the latter is numbered. The reading is by six equidistant microscopes, secured to the face of the pier, and illuminated through apertures in the same from a gas-lamp west of it.

The telescope is a cylinder, secured to the circle both at the centre and at the extremities. Its object-glass is four inches in diameter and five feet in focal length. Troughton & Simms were the makers. The instrument had not been in use for some months, and required considerable preparation to put it in serviceable order.

In the same room, and east of the Mural Circle, is the Meridian Circle, an instrument originally made by Ertel & Son, and remodelled and furnished with new circles by Mr. Wm. J. Young, of Philadelphia. The material changes, from the description of it given in the volume of observations for 1846, are the substitution of circles 40 inches in diameter for the defective ones of 30 inches, and the removal of the clamp from one of the circles to the axis. It has not been in use during the current year, and a more detailed account of the instrument may be appropriately deferred.

The clock in this room is placed south of, and equidistant from, the two circles. It was made by Mr. Chas. Frodsham, of London, and is similar in its construction to that of the west wing. But, instead of the

* Communicated by Prof. Bache.

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single knife-edge, its pendulum index carries a small crutch with two knife-edges which at each vibration impinge simultaneously upon globules of mercury in separate receptacles of the bracket, whereby the galvanic circuit is closed without passing it through the pendulum. A recording apparatus, which was furnished with the Locke clock, has been arranged for the instruments of this room. The clock performs satisfactorily.

The barometer is Newman No. 75; its tube 0.582 inch in diameter. It is secured to the back of the clock pier.

The thermometers are mentioned elsewhere and in more detail than the purport of this would allow.

The other room of the east wing is wholly devoted to nautical and other instruments for naval purposes. Cases to contain the chronometers, and shelves, &c., are so disposed as to accommodate the largest number and facilitate their examination or distribution. There are two clocks in this room. The one used in rating the chronometers was made for the old Depôt of Charts and Instruments by Messrs. Parkinson & Frodsham, and is similar to that of the west wing. It is mounted upon a granite pier, in the southwest corner of the room, and, except the Kessel clock, its performance is more satisfactory than that of any other one belonging to the establishment. To facilitate and render more certain the comparison of chronometers when noise renders the beat inaudible, it is provided with an electro-magnetic battery, connected by wires with a heavy-sounding tilt-hammer placed near the chronometer cases, which strikes seconds audibly at each impact of its pendulum index with the mercury globule. The other clock was made by Messrs. Eggert & Son, of New York, and was put up against the east wall.

The Transit in the prime vertical is in the north room of the south wing. The telescope has an aperture of 4.85 inches and a focal length of 78 inches. It is attached to one extremity of an axis 42 inches long, the other extremity carrying a counterpoise. The pivots of the axis are of fine steel 3.5 inches in diameter and are hollow. The telescope and its counterpoise are outside of the supporting pier, but their weights are transferred to the bearing points of the Y's by levers and other counterpoises within the pivots and axis. Its pier is a wide monolith, whose central portion has been cut out for the accommodation of a reversing apparatus of special construction.

The instrument has not been in use for several years, and such had been its neglect that it was necessary to dismount and grind out the oxidation of its pivots and make other extensive repairs. These were very successfully performed by Mr. William Würdemann and the machinist of the observatory, and observations in the prime vertical will shortly be resumed.

The clock was made by Charles Frodsham, and is mounted against a granite pier placed east of the prime vertical transit instrument. Instead of glass, it has a steel cylinder for the mercury of its pendulum, and the pendulum-rod screws into a cap covering the upper part of it. The pendulum index has a single knife-edge like the clock of the west wing.

At present the other room of the south wing is not in use. It is intended to remove the piers erected for the "refraction circle," and fit the room for library purposes.

The Equatorial instrument under the dome is mounted upon a massive granite pedestal, which rests upon a hollow conical pier, whose foundation is nine feet below the ground line. The instrument was made by Messrs. Merz & Mahler, with an object-glass of 9.6 inches, and focal length of 14 feet 3 inches. The finder has an object-glass of 2.6 inches diameter, and focal length of 32 inches. The hour and declination circles are, respectively, 15 and 21 inches in diameter. The telescope may be kept in motion by clock-work, regulated by a Frauenhofer centrifugal pendulum, and differential measures are made with a micrometer microscope, constructed from a design by the same distinguished optician. The instants of observation are recorded by chronographic apparatus with Bond's spring governor and cylinder, connected with a battery and the clock in the south wing.

A comet-seeker, made by Messrs. Merz & Mahler, stands within the rotunda when not in use. It has an object-glass of 3.9 inches aperture, and 32 inches focal length, and eye-pieces with magnifying powers ranging from 12 to 50 times. It is equatorially mounted on a shaft of brass supported upon a tripod having the ordinary adjusting screws, and has hour and declination circles each of 5 inches diameter, whose divisions

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read by means of verniers to 1′. Its telescope is of deal, with a veneering of mahogany. It is accurately balanced in every position.

There are substantial supports outside the rotunda, from one or the other of which all portions of the heavens may be seen, and a level platform covers the roof of the building for the greater convenience of the observer with the comet-seeker.

For the purpose of giving correct time to the city, a staff has been placed on top of the dome, and a large, but light, ball is hoisted ten minutes before 12 o'clock of each day, except Sunday. The pulley is connected with an electro-magnetic battery after the ball is up, and the circuit is broken by the assistant in the chronometer room at the instant of noon.

For a more detailed account of the buildings and instruments, see "Report on the plan and construction of the Depôt of Charts and Instruments, with a description of the instruments, &c., Washington, 1845," and "Astronomical Observations made during the year 1845 at the National Observatory, Washington, 1846."

The Naval Observatory and Hydrographical Office is under the general superintendence of the Bureau of Ordnance and Hydrography, of which Captain A. A. Harwood, U. S. N., is the chief. Its naval duties proper have been much increased during the present year, (1861,) whilst the exigencies of the service have not permitted the usual number of naval officers as assistants.

Lieutenant William B. Whiting and Prof. A. G. Pendleton have been charged with the receipt, examination, and distribution of the books and charts to cruising vessels, and the accounts incident thereto. More than 20,000 sheets have been sent from the office since May last. Of this number 18,500 sheets were received from the Superintendent of the United States Coast Survey. The prompt and unceasing efforts of Prof. Bache to supply the demand for information resulting from operations under his directions, and so indispensable to vessels of the navy, cannot be too highly appreciated.

Acting Master Daniel G. Major, aided by the machinist, Mr. John Clark, is assigned to the nautical instrument department. Mr. Major daily compares chronometers belonging to the government and those on deposit for trial, selects the proper instruments for ships to be fitted for sea, drops the time-ball at noon, and is charged with the accounts relating to the receipts and expenditures of instruments at the several naval stations. Instruments returned from vessels, and the permanent instruments of the establishment which require repairs, are put in order by Mr. Clark, whose inventive abilities and mechanical skill have been most usefully employed.

Mr. James Ferguson, assistant astronomer, has had entire charge of the Equatorial Instrument. Since August last much of his time has been occupied in supervising the labors of copyists employed in transcribing observations made during the years 1851 to 1860. But he is indefatigable as an observer, and, notwithstanding the interruptions to which he has been subjected, by a thoroughly systematized routine his reductions keep pace with the mass of carefully made observations accumulated by his zeal.

The Transit Instrument has been in charge of Prof. M. Yarnall, U. S. N., and (up to August last) Prof. Robinson. During a part of the year Prof. Yarnall was alone. Prof. Simon Newcomb, U. S. N., has been his co-laborer since October. Owing to the inevitable consumption of time in minute reading of the fillets, and the fidelity of Prof. Y. in following the moon at every possible culmination, the reduction of observations with this instrument had fallen somewhat in arrear. It is greatly to the credit of these observers that they have spared no efforts to obtain the best possible results that a somewhat inferior instrument is capable of affording.

A small number of observations with the Mural Circle were made by Prof. Lawrence during the first months of the year, but they were not reduced by him. After the instrument was again in order it was placed in charge of Profs. Jos. S. Hubbard, U. S. N., and F. G. Hesse, U. S. N., who observe with it on alternate nights. The excellence of their results, shown in the following pages, is not less creditable to their fidelity and skill than as a proof of the care bestowed in perfecting the instrument.

Each observer is required to make a fair transcript of his work on the days following the observations, and is prohibited from accumulating a greater number than, after making allowance for the average number of cloudy nights probable, he can prepare for press within the month.

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Mr. Thomas Harrison, so long the efficient and careful clerk of the establishment, is charged with the records of its extensive business and other correspondence, and of all accounts, whether of the employés or for purchases, made for the navy.

In addition to their police duties as watchmen, Mr. Thomas Hays and Mr. Dennis Horigan are required to keep the Meteorological Journal, to aid in preparing charts for shipment, to attend visitors at the Observatory, and a multitude of minor duties for which their experience and fidelity have shown them to be competent. The term of duty is eight hours, and one or the other of them is always present.

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THE TRANSIT INSTRUMENT.

The objects observed with the Transit Instrument during this year were the moon and moon-culminating stars, stars which had been used for comparisons in equatorial observations, stars to determine clock and instrumental errors, stars from the Catalogue of Lacaille not subsequently observed, and, in the latter months of the year, the Sun and planets Mercury, Venus, Juno, Jupiter, Saturn, Uranus, and Neptune. The Comparison Stars have the letters given them in the equatorial observations.

With the exception of stars within 5° of the pole, and during two or three nights when the battery was out of order, the times of transit over the wires have been recorded by means of an electro-chronograph. It has already been stated that the pendulum index of the clock is wrought to an extremely fine knife-edge parallel to the direction of motion of the pendulum, and that at every vibration this knife-edge touched the surface of a globule of mercury placed directly beneath it. The pendulum is insulated and connected with one pole of a galvanic battery, the globule being connected with the other pole by means of a circuit passing through a key-board, which may be held by the observer. To complete or break the circuit at pleasure there is a spring to the key connected with the pole of the battery opposite to that which is directly in contact with the key-board. There are thus two circuits, one passing through that spring and the other through the pendulum. Each has its relay magnet and recording pen. When the connexion of the key-board with the pole of the battery is completed, one circuit is closed whenever the pendulum passes the vertical, and the other whenever the key is pressed down by the observer.

The chronographic pens record the instants of observation upon a fillet of paper of indefinite length, which is unwound from a cylinder by clock-work. These records are in the form of burrs raised on the paper, as in the Morse system of telegraphing, and the seconds spaces are about one inch in length.

If the clock-work were permitted to run continuously from the commencement to the end of a night's observations, the fillet would be of unmanageable length; and to obviate this each observation is generally registered independently of all others. When the object is near the first system of wires over which the observer intends to note it he completes the circuit and starts the fillet by means of the circuit-key. The transit being completed, he looks at the face of the clock and strikes a signal simultaneously with the beat of a second he has plainly distinguished. The chronograph is then stopped, and the hour, minute, and second, the name of the object observed and necessary remarks, are written upon the fillet. The observations are read by counting the seconds and fractions backward from the one noted upon the fillet. This tedious operation, as well as that of recording the observations in the note-books, is generally confided to a computer.

This instrument has five groups or systems of wires, each system containing five wires, and the distances between the individual components are such that simple inspection of the times occupied by an object in traversing the intervals shows the system over which it was observed. In addition to these, there are three other vertical wires, movable by a micrometer screw.

The adopted intervals between the different systems and between the several wires of each system were obtained by measurements with the micrometer. The readings of the micrometer at coincidence of its middle wire with the several fixed wires were as follows on the 23d of July and 14th of September:

Clamp W.	Set A.		Set B.		Set C.		Set D.		Set E.	
	July 23.	Sept. 14	July 23.	Sept. 14.	July 23.	Sept. 14.	July 23.	Sept. 14.	July 23.	Sept. 14.
	r.		*r.*		*r.*		*r.*		*r.*	
1	0. 623	. 634	15. 075	. 470	29. 415	. 420	42. 620	. 622	56. 975	. 963
2	1. 213	. 230	15. 620	. 620	29. 995	. 003	44. 330	. 334	57. 555	. 550
3	1. 769	. 770	16. 220	. 224	30. 535	. 546	44. 915	. 930	59. 200	. 204
4	3. 455	. 474	16. 750	. 750	31. 140	. 135	45. 470	. 473	59. 750	. 744
5	4. 119	. 131	18. 465	. 480	31. 655	. 660	46. 002	. 003	60. 320	. 324

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A revolution of the micrometer screw, as determined by observations of Polaris, is 1*s*.5883. From this value and the preceding measures we obtain the following distances of each wire from the mean of its set.

Wire.	A.	B.	C.	D.	E.
	s.	*s.*	*s.*	*s.*	*s.*
1	+ 2.561	+ 2.151	+ 1.799	+ 3.253	+ 2.842
2	1.620	1.282	0.875	+ 0.537	+ 1.915
3	+ 0.750	+ 0.326	+ 0.016	— 0.401	— 0.704
4	— 1.941	— 0.512	— 0.932	1.273	1.570
5	— 2.990	— 3.247	— 1.758	— 2.116	— 2.483

The hypothetical wire, to which all transits are reduced, is a mean of sets B, C, and D; and for the reduction of the mean of each set to this mean we have:

A.	B.	C.	D.	E.
s.	*s.*	*s.*	*s.*	*s.*
+ 44.947	+ 22.423	— 0.002	— 22.421	— 44.791

In order to obtain an independent and more exact determination of the intervals, a series of observations of *Polaris* over all the wires was made during November and December. These observations show that the micrometer screw is subject to irregularities whose maximum amount is about two-hundredths of a second of time. They also indicate that the reductions for C and D should be +0*s*.019 and —22*s*.440, respectively; but because of the smallness of these changes from previous determinations and of the fact that the majority of the stars were observed over all three sets, it has been deemed proper to use the same intervals throughout the year.

INSTRUMENTAL ERRORS.

The errors of level and collimation were obtained by reversing the instrument over a basin of mercury and measuring the distance between the middle wire and its image with the micrometer screw attached to the diaphragm. A collimating eye-piece is used. If we put 2Δ for the distance of the middle wire west of its image when the clamp end of the axis is east, and $2\Delta^1$ for the same quantity when the clamp is west, $2p$ for the excess in diameter of the clamp pivot, $-r$ for the reduction of the middle wire to the mean of sets B, C, and D, and include the diurnal aberration in the collimation, we have—

$$c = \tfrac{1}{2}(\Delta - \Delta^1) - p + r - 0s.016 \text{ for clamp east.}$$
$$c = -\tfrac{1}{2}(\Delta - \Delta^1) + p + r - 0s.016 \text{ for clamp west.}$$
$$b = -\tfrac{1}{2}(\Delta + \Delta^1) - p \text{ for clamp east.}$$
$$b = -\tfrac{1}{2}(\Delta + \angle^1) + p \text{ for clamp west.}$$

From the mean of a great number of observations made with the spirit level $p = -0s.025$, a value which has been used throughout the year.

The distances which the line of collimation passes from the pole and the point in which the meridian intersects the equator are used instead of errors of level and azimuth. When the error of collimation is known, the first distance is directly obtained by observations of stars very near to the pole, and may be represented by n. The second distance is determined by combining the value of n with the error of level. Designating this by b, the latitude of the Observatory by ρ, and representing this second distance by m, we obviously have—

$$m = -n \tan. \rho + b., \sec. \rho;$$

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and the correction applicable to the observed transit of any star to reduce it to the meridian will be obtained from the formula

$$\text{Correction} = m + n \tan. \delta + c, \sec. \delta,$$

in which δ represents the apparent declination of the star.

As a general rule, a different value of n is used with each night's work; but when its extreme variations during several days have been within four-hundredths of a second of time, a mean of all the determinations has sometimes been adopted as a constant for the whole time.

These values, as well as those of m and c, are given in tables at the foot of the printed pages of observations.

It will readily be seen that if m be neither large nor subject to great variation it will be eliminated through the clock error, and therefore for astronomical purposes it may be entirely neglected. In effect it actually was combined with the clock error in the reduction of observations made towards the close of the year.

The clock error has been obtained from the transits of standard stars in the British Nautical Almanac for 1860, reduced to the date of observation by Peters's constants and Main's proper motions, including all the terms which can affect the second decimal of the seconds. A mean of all the errors resulting from observations during the night or day is adopted as the clock error for the mean of the several times of transit, and a rate is obtained from equations for rate given by the separate results, and which are solved to obtain the most probable rate. The mean error, adopted rates and times, are given at the bottom of each printed page of the observations.

For the purpose of ascertaining how far the right ascensions resulting from observations might be vitiated by one observer using clock errors determined by the other, the following stars were observed over alternate wires by Professors Yarnall and Newcomb:

December 11, 1861.

Name of star.	Seconds of transit over mean wire.		
	Yarnall.	Newcomb.	Y.—N.
	s.	s.	s.
γ Piscium	54. 15	54. 24	—0. 09
100 Aquarii	21. 42	21. 48	. 06
B. A. C., 8214	18. 53	18. 55	— . 02
B. A. C., 8225	46. 21	46. 20	+0. 01
103 Aquarii	18. 62	18. 68	—0. 06
B. A. C., 8259	44. 40	44. 50	0. 10
B. A. C., 8287	19. 58	19. 65	—0. 07
Mean	- -	- -	—0. 056

Or observations made by Prof. Newcomb under the above circumstances would require to be diminished 0s.056. When the clock rate has been determined from the change of its error between the observations of the two observers, this correction has always been applied; and, when the resulting position of a fundamental star is thus affected by the entire amount of the personal equation, such result is never included in those from which the concluded position of the star is to be inferred. There have been few other cases when its application was necessary.

EXPLANATION OF THE PRINTED OBSERVATIONS.

Column 1 contains the date, in which the day commences at apparent noon.

Column 2 contains the number for reference.

Column 3 contains the name of the object observed, or its approximate declination when the star is not contained in catalogues.

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Column 4 contains the names of the several wire systems over which the object was observed.

Columns 5—9, inclusive, contain the seconds and decimals of the observed transit over the several wires as read from the fillet. Stars observed below the pole are recorded in reversed order, so that the same letters designate the same absolute sets of wires.

Column 10 contains the mean of the several means of the wires observed in each set. When the same number of wires are not observed in each set it differs from the mean of the individual wires.

Column 11 contains the following different corrections applied to the result in the preceding column to reduce it to the time at which the object passed the meridian. 1. For broken observations of stars more than 10° distant from the pole derived from the equatorial intervals, page xiii, and the secant of the observed declination; and for stars within 10° of the pole, an additional correction for the difference between the curve described by the star and its sine. The following table was used in obtaining this last correction:

H. Angle.	(Arc. — Sin.)	H. Angle.	(Arc. — Sin)	H. Angle.	(Arc. — Sin.)
m.	*s.*	*m.*	*s.*	*m.*	*s.*
3	0. 00	12	0. 33	21	1. 76
4	. 01	13	. 42	22	2. 03
5	. 02	14	. 52	23	2. 32
6	. 04	15	. 64	24	2. 63
7	. 07	16	. 78	25	2. 97
8	. 10	17	0. 94	26	3. 34
9	. 14	18	1. 12	27	3. 74
10	. 19	19	1. 31	28	4. 17
11	0. 25	20	1. 52	29	4. 64

2. For the reduction of the mean of the sets observed to the mean of sets A, B, and C. For defective observations of the Moon obtained by Mr. Airy's formula, published in the Greenwich Observations:

$$\text{Correction} = \frac{3600+\text{I}}{3600} \times \frac{\text{Sin ☽'s Geo. Z. D.}}{\text{Sin ☽'s App. Z. D.}} \times \text{Sec. ☽'s Geo. Dec.}$$

in which I represents in seconds of time the Moon's increase of right ascension in one hour of longitude, as given in the Nautical Almanac. The correction for broken observations of the Sun and Planets was increased by their motions in right ascension during the time expressed by the correction.

3. The reduction of the plane in which the instrument revolved to the plane of the meridian obtained from the formula

$$\text{Correction} = m + n \tan \delta + c \sec. \delta$$

Column 12 contains the correction for clock error obtained as stated and brought forward to the instant of observation by the rate. The beat of the clock and that of seconds by the chronograph-register not being synchronous, a correction of $0s.40$ has been applied to the clock error, when circumpolar stars have been observed by eye and ear instead of by the register. Observations by the former method were infrequent, and in the few cases that occur the clock corrections are enclosed within parentheses, (.)

Column 13 contains the apparent right ascension of the centre of the object observed. This is derived from the sum of the numbers in the three columns immediately preceding. When only one limb of the Sun or a Planet was observed there is an additional term for the siderial time of the semi-diameter in passing the meridian, taken from the American Ephemeris and Nautical Almanac. These values are given at the bottom of the page.

Column 14 contains the computed correction applicable to the preceding column to reduce the observations of stars to the mean places $1860 + 0^d.4$, or the instant when the Sun's mean longitude was 280°. These have been obtained by means of formulæ and tables similar to those given in the Appendix to the Washington Observations for 1847, where the co-efficients are the same as have been adopted in the American Ephemeris and Nautical Almanac for 1860. For the close circumpolar stars the terms depending on 2☽ and a portion of those depending on ☽ — ♈¹ are taken into account. The corrections for proper motion are those given by the Rev. R. Main, in vol. xix, Memoirs of the Royal Astronomical Society; for

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stars whose proper motions are not given there, those of the B. A. Catalogue have been used, and for all other stars no proper motion is applied.

Column 15 contains the initial letters of the names of the observers: Y. for Prof. Yarnall, R. for Prof. Robinson, and N. for Prof. Newcomb.

A comparison is given, pages 336 to 340, of the observations of the Sun, Moon, and Planets, with their tabular places in the American Ephemeris and Nautical Almanac for 1861.

The mean places for $1860 + 0^d.4$ of all the stars observed have been collected in pages 296 to 333. Those rejected from the final result are enclosed in parentheses, (.) And a catalogue of observed stars, arranged according to the order of right ascension, will be found pages 404 to 431.

Each observer computes the corrections and prepares his own observations for printing, but the larger portion of Prof. Robinson's work having been left in an unfinished state, the computations were made by Prof. Yarnall. Every precaution is taken to insure accuracy in the calculations and correct copies in the printing. All observations of this year, with one or two exceptions, noted at the foot of the page, have been made with the instrument clamp west.

An asterisk denotes that the magnitude has been derived from another catalogue.

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THE MURAL CIRCLE.

The Mural Circle was in use only a part of the year 1861. It was chiefly employed in observing declinations of the Sun, Moon, the two interior Planets, Polaris, α Lyræ, and comparison stars for the Equatorial Instrument.

The method of observing was always as follows: The circle having been previously set so that the divisions nearest the reading for the given declination were as accurately as practicable under the zero of the microscopes, while the object passed through the field several contacts or bisections were made with the micrometer wire, the time of making each contact being always carefully noted. The contacts or bisections varied in number from two to ten, or even more, according to the circumstances of the case. The circle microscopes were read either before the micrometer observation or after, and sometimes both before and after. In observing the Sun the circle was first set for one of the limbs and read, and while that limb was approaching the centre of the field several micrometer readings were taken. The circle was then quickly moved to the even reading nearest to that for the other limb, and another set of micrometer contacts was obtained. The reading for the final position of the circle was made at leisure. The order of limbs observed (N. S. or S. N.) was reversed on successive days so as to eliminate errors, whether from inclination of wires or other undetected errors of that system. For the Planets, where both limbs could be observed, contacts of each limb were made alternately.

By this method of observing the disturbing influence of variable temperature is transferred from the microscope-screws, where it was generally appreciable, to the micrometer-screw, where, from symmetry of construction, it is sensibly inappreciable, and the readings being always within a few seconds of the division-marks of the circle, the correction for runs is thus reduced to zero.

For determination of the nadir point a cap is provided which fits loosely over any of the eye-pieces to the telescope, and supports a plate of thin glass, inclined at an angle of 45°, just above the aperture. This arrangement has the advantage of enabling the observer to collimate without removing the eye-piece used, and consequently avoids the risk of injury to the wires, whilst it also prevents the otherwise frequent introduction of dust by air currents, &c.

During the earlier months of the year the nadir point was determined in the following manner: The position of the telescope upon the circle is so adjusted that when the nadir divisions of the latter are accurately under the zero of the microscopes, the image of the fixed horizontal wire, in the field of the former, is seen at a small convenient distance from the wire itself. The true position of the nadir point, relatively to the actual circle reading, is therefore midway between the two; and if the movable wire be now introduced into this space, and so placed as to coincide with its own image, the corresponding micrometer reading, combined with that of the circle microscopes, will evidently give the nadir point. Afterwards, the following modification was adopted because susceptible of greater accuracy: The instrument being as before, the micrometer wire was so placed that it and its own image accurately divided the space between the fixed wire and its image into three equal parts. The reading being noted, the former wire was moved across the centre of the space and made to interchange with its own image in a subdivision similar to the first. The mean of the corresponding readings was evidently that belonging to the nadir point, while the equidistances could be more accurately estimated than the simple contact of wire and image. The circle microscopes were read both before and after the micrometer observation. The mean of these readings always differing by a small quantity from the exact given degree, this difference, converted into parts of a micrometer revolution, and

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applied to the nadir mic-reading, gave the micrometer zero, or the reading that would be shown by the micrometer when its wire coincided with its own image, and the circle reading was exactly equal to the given degree for the nadir. Until September 2, this given degree was 210°; then 0° until October 16, and 15° until November 2, after which it was placed at 180° during the remainder of the year.

The value of one revolution of the micrometer-screw has been assumed as 62″.853. This was determined by Prof. Yarnall, in August, 1858, with the collimating eye-piece. A few measures, made in January, 1862, indicate that the adopted value should probably be a little less, the correction required being about $\frac{1}{700}$ part of the whole.

In September a new adjustment of the micrometer head, relatively to its scale, and amounting to nearly a quarter of a revolution, rendered desirable a re-determination of the eccentricity of the former. The subjoined table of corrections was obtained, which differs from that previously used* only by the constant quantity added to the latter for convenience, thereby indicating that the eccentricity resides in the graduated head and not in the axis of the screw. The observations made by Prof. Lawrence, and a part of those by Prof. Hesse, were corrected from the old table; but as the constant difference affects equally the nadir and star observations, it has no influence upon the resulting declinations.

Correction of mic-readings on account of eccentricity of micrometer head.

Reading.	Correction.	Reading.	Correction.
r.	*r.*	*r.*	*r.*
.00	+0.0009	.50	—0.0011
.05	+ 4	.55	— 6
.10	0	.60	+ 1
.15	— 5	.65	8
.20	10	.70	14
.25	14	.75	17
.30	16	.80	18
.35	18	.85	17
.40	18	.90	15
.45	15	.95	13
.50	—0.0011	.00	+0.0009

No account has been taken during this year of the errors of circle graduation, either accidental or systematic. The probable value of the former, under the mean of six microscopes, was found, in 1845–'46, to be only 0″.174,† and less than the residual error peculiar to the telescope; the systematic error of division was inferred to be zero from the smallness and convergence of the reduction of the mean of two and of three microscopes to that of six.‡

In the printed observations:

Column 1 contains the date, the day being assumed to commence with the transit of the Sun.

Column 2 contains the number for reference.

Column 3 designates the object observed. The names of the stars are generally taken from the several catalogues in the following order of preference:

Nautical Almanac.
Catalogue of the British Association.
Weisse's Catalogus Stellarum ex Zonis Regiomontanis.
Lalande's Catalogue, published by the British Association.
Lacaille's Catalogue, published by the British Association.
Bessel's Zones.
For stars marked "Anonymous," the approximate right ascension is always given.

Columns 4, 5–11, are sufficiently explained by their respective titles.

* Washington Astronomical Observations, 1846, p. XVIII. Table E.
† Washington Astronomical Observations, 1845. Appendix, p. 117.
‡ *Ibid.*, p. 116.

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Column 12 contains the mean of the observed micrometer readings; and

Column 13 gives the corrected mean, deduced from the preceding by the application of the eccentricity-correction quoted above, and of the reduction to the meridian. The latter expressed in terms of a mic-revolution is computed by the formula

$$\Delta_\mu m = \frac{1}{r \sin 1''} \sin^2 \tfrac{1}{2}h \sin 2\delta$$
$$\text{or} \quad [3.5161] \sin^2 \tfrac{1}{2}h \sin 2\delta$$

where h denotes the hour-angle, always assumed equal to the difference between the noted time of observation and the computed clock time of transit. In the case of the Moon this difference is multiplied by the factor $1-\lambda$, given in Table XIV, Appendix to Washington Astronomical Observations, 1845.

For the Sun, Moon, and planets, the correction on account of their motion during the observation is also applied to the micrometer reading, and is obtained in parts of a revolution from the formula

$$\Delta_\delta m = [4.6454] \cdot h \cdot \Delta\delta = [6.4245] \cdot h \, \Delta'\delta$$

where $\Delta\delta$ indicates the hourly motion in declination and $\Delta'\delta$ the motion in one minute of sidereal time.

Columns 14 and 15 show the readings of the (Newman) barometer and its attached thermometer, both of which are adopted as correct in the computation of refraction.

Column 16 shows the reading of the external thermometer, a standard by Troughton & Simms, and designated No. 3 in the table of corrections given in the Appendix to Washington Observations for 1845, p. 54. From this table the following corrections of the present scale are quoted, and the corresponding corrections of log T in the refraction tables are also given:

Ther. scale	Corr.	Δ log T.	Ther. scale.	Corr.	Δ log T.
°	°		°	°	
30	− 0.04	+ .00004	66	+ 0.20	− .00016
32	.06	5	68	.25	21
34	.11	10	70	.22	18
36	.08	7	72	.12	10
38	.05	4	74	+ .03	− 3
40	.02	2	76	− .01	+ 1
42	.01	1	78	.04	3
44	.00	0	80	.04	3
46	.01	1	82	.01	1
48	.03	3	84	.00	0
50	.04	3	86	.06	5
52	.03	3	88	.12	10
54	.01	3	90	.14	11
56	.01	1	92	.14	11
58	− .03	+ 3	94	.14	11
60	.00	0	96	.13	11
62	+ .05	− 4	98	.12	10
64	.12	10	100	− 0.12	+ .00010
66	+ 0.20	− .00016			

Column 17 contains the value adopted for the micrometer zero. It is obtained from all the nadir-readings of the day or night, either by simply taking the arithmetical mean, or where sufficient evidence of actual change was shown, by assuming the variation as proportional to the time. The general changes in the value of this quantity, where no alterations have been made in the adjustments of the instrument, are partly due to the variations of mean temperature, and are partly connected with the instrumental deviations from meridian adjustment.

Column 18 contains under the heading of "corrections for instrument" the micrometer equivalent, or the difference between the quantities in columns 13 and 17, converted into arc. If m denotes the "corrected reading" and m_o the micrometer zero, the values in this column are obtained by the formula: corr. $= (m_o - m) \cdot 62''.853$.

Column 19 contains as "correction for object" the sum of the following quantities:

1. The correction for refraction, corresponding to the observed zenith distance, and barometer and thermometer readings. This correction is computed from Bessel's tables, as given in an expanded form in

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the Appendix to the Washington Observations for 1845. The observed zenith distance is obtained from the circle reading by applying the micrometer equivalent and subtracting the zenith degree.

2. The correction for parallax, for observations of the Sun, Moon, and Planets, computed, for the first and last, by the formula:

$$p = \pi \cdot \sin\,(z' - 11'.2\,;)$$

and for the Moon:

$$\sin p' = \sin \pi \cdot \sin\,(z' - 11'\ 14''.54) \cdot [9.9994302,]$$

$$\text{or} \quad p' = \pi \cdot \sin\,(z' - 11'\ 14''.54) \cdot [9.9994302] \cdot \frac{\text{sine}\ \pi}{\text{arc}} \cdot \frac{\text{arc}\ p'}{\text{sine}}.$$

$$p = p' \mp \tfrac{1}{2}\,(p' \mp s) \sin p' \sin s,$$

the upper signs corresponding to observations of the upper limb and *vice versa*. The quantities $\frac{\text{sine}\ \pi}{\text{arc}}$ and $\frac{\text{arc}\ p'}{\text{sine}}$ are given in Tables IX and X, and the correction of p' in the last formula is given in Table XI of the Appendix to the Washington Observations for 1845.

In these formulas:

z' represents the observed zenith distance, corrected for refraction.

π, the equatorial horizontal parallax, as given in the American Nautical Almanac.

s, the Moon's semi-diameter.

p, the required correction for parallax.

3. The correction for semi-diameter when only one limb has been observed. For the Sun and Planets this correction has been taken immediately from the Nautical Almanac; for the Moon it has been computed from the value of π, by assuming the ratio given by Burckhardt, increased by $\frac{1}{500}$ part.* This gives

$$\text{sine}\ s = \sin \pi \cdot [9.4358746,]$$

$$\text{or} \quad s = \pi \cdot [9.4358746] \cdot \frac{\text{sine}\ \pi}{\text{arc}} \cdot \frac{\text{arc}\ s}{\text{sine}}.$$

4. The correction for defective illumination required for the observations of Venus. This quantity is computed by the formulas:

$$\tan \theta = \text{cosec}\,(\alpha' - \alpha) \cos \delta' \tan \delta - \cot\,(\alpha' - \alpha) \sin \delta$$

$$ds' = s' \text{ versin } \theta,$$

where the accented letters refer to the Planet, and the unaccented to the Sun. The correction is most conveniently obtained by interpolation from the subjoined table showing its value for each tenth day during the observations of the Planet:

Date.	ds'.	Date.	ds'.
	″		″
Sept. 20	+ 0.43	Oct. 30	+ 0.06
30	.36	Nov. 9	+ 1
Oct. 10	.27	19	— 1
20	+ 0.16	29	9
		Dec. 9	— 0.25

In column 20 is contained the "corrected circle reading," which is the sum of the quantities in columns 11, 18, and 19, and represents the true geocentric zenith distance of the object observed increased by the even zenith degree.

Column 21 contains the observed declination, obtained for stars above the pole, by subtracting the zenith distance from the assumed latitude, 38° 53′ 39″.25, and for stars below the pole, by subtracting 218° 53′ 39″.25 from the zenith distance. Where both limbs have been observed, the mean result only is entered in this column, and the half difference of the corrected readings is given in the margin as the observed semi-diameter.

Column 22 contains for the fixed stars the reductions to the mean declinations for the commencement of the year 1860. These reductions were computed by Bessel's formulas, with the constants of the American

* Peirce. Tables of the Moon. Introduction, p. 9.

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Nautical Almanac, and in addition to the terms involved in the A. B. C. D. there given, they include, also, those depending on twice the Moon's mean longitude.

Column 23 contains the initial of the observer's name; L. denoting Prof. Lawrence, H. Prof. Hubbard, and He. Prof. Hesse.

And, finally, the readings of the pier thermometers are given in the margin. Of these there are five: four of which are attached to the face of the pier in the positions indicated by their letters, and the fifth is inserted in a hole drilled in the top of the pier. These thermometers are generally read at every determination of the nadir point, and furnish materials for an investigation of the relation of the variations of the latter to the changes of temperature.

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THE EQUATORIAL.

The Equatorial has been employed, during the year 1861, in determining the places of the smaller and more recently-discovered asteroids, and in observations of occultations and eclipses. Some time has also been devoted to more general examinations of the heavens, in search of new objects of interest. In this latter field the labor of the observer has been greatly aided by the star-charts of the Berlin Academy and those more recently published by Messrs. Argelander, Chacornac, and Hind.

The observations of the present year have been of the asteroids Echo, Melpomene, Proserpine, Leto, Egeria, Virginia, Themis, Circe, Melete, and Irene; also the comets 1861.I, 1861.II, and that of Encke. There were besides observed the last contact of the eclipse of the Sun of December 30, and several occultations of stars by the Moon.

The determinations of places made by this instrument are all differential—that is, they are the results of comparisons made with fixed stars, whose places are known either from the catalogue, or have been subsequently found by observations with the meridian instruments of the Observatory; the differences of right ascension being the observed differences, in sidereal time, between the passages of the compared objects over the transit wires of the instrument, while the differences of declination are measured by the revolutions of the micrometer screw and are dependent upon its value. For a better understanding of these observations, it may not be amiss to describe the principal pieces of the micrometer, their construction, and arrangement.

The diaphrágm, or frame holding the wires of the micrometer, is composed of two laminæ or plates of brass, perforated in the middle by oblong and corresponding apertures somewhat larger than the field of the telescope. These plates are held each in a wedge-shaped chase or groove, and are movable past each other, in the direction of their longest dimension, by milled-headed screws, one of which is the micrometer screw of the instrument. One of these plates carries the transit wires stretched lengthwise over the aperture above described; and the other the declination wires perpendicular to them. Across the aperture of the plate carrying the transit wires there is also stretched, at right angles to them, a single wire, which serves to mark the middle of the field, and also as a test or *comparateur* of the parallelism or inclination of the other wires. The transit plate is also provided with an adjustment by which either of its wires may be made perpendicular to any one of the other set. The parallelism of both sets depend always upon the skill of the artist by whom they have been placed. The common section of these plates is at right angles to the optical axis of the telescope and adjustable to its focus, whilst the whole system of wires may be moved about the optical axis, and the angular position read to minutes of a degree by a vernier moving on a position circle fixed to the eye-end of the telescope. The wires used are of spider-web, illuminated at night by lamps held in a pair of tubes set in a collar, which revolves about the tube of the telescope. The revolutions of the micrometer screw are counted on a scale, graduated from 0 to 80, on the side of the groove which holds the declination plate, and the parts of revolutions on the head of the screw which is divided into hundredths.

In the year 1861 the transit plate of the micrometer (besides the cross-wire marking the middle of the field) carried five other wires. The three inner ones, designated in the printed observations by the letters A, B, C, have the following equatorial intervals, the wire marked A being on the west side of the eye-piece when the instrument is pointed south and the head of the micrometer screw turned downward:

$$B - A = 11^{s}.00$$
$$C - B = 10.59$$

The two wires exterior to A and C have been used only when the intervals between the other wires A, B, and C are equal or nearly so to the intervals between the compared stars, in which case one of the transits

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is usually lost, or where the objects are indistinct and an increase of time is desirable for the more careful bisection of the star by the declination wires. In such instances these outer wires have been used without special designation, except a note in the hand-book of the observer. They may be called a and c, and their equatorial intervals have been as follows:

$$\begin{aligned} & \quad s. \\ B - a &= 14.40. \\ c - B &= 14.22. \end{aligned}$$

The designations of the wires of both sets are also arbitrary in this, that A, a, always indicate the wires over which the star observed first passes.

The other, the declination plate of the micrometer, has, during the year 1861, also held five wires, designated by numbers which begin with the wire nearest the head of the micrometer screw. The intervals between them for the whole time have been the following:

$$\begin{aligned} & \quad R. \\ 2 - 1 &= 17.003 \\ 3 - 1 &= 29.861 \\ 4 - 1 &= 42.895 \\ 5 - 1 &= 59.961 \end{aligned}$$

These values were found by bringing each declination-wire to coincide with the middle wire of the transit plate of the micrometer, and reading the scale and micrometer head at each coincidence. The differences between the readings give the intervals between the wires on which they were taken. For these coincidences an eye-piece was used magnifying 400 times, and the measurements were repeated until the resulting mean became satisfactory.

The value of a revolution of the micrometer screw has been fixed at 15″.3696 at the temperature of 47° Fahrenheit, this being a mean of all the results obtained for it between the years 1849 and 1860. Observations were made at various times between these years for the purpose of deducing a co-efficient by which to correct this value for the effect produced by change of temperature. The results of these observations, made mostly upon stars in the Pleiades, and between the temperatures of 20° and 60° of Fahrenheit, have not as yet been conclusive. The correction derived by Struve, (Mensuræ Micrometricæ, p. xvi,) for a screw of nearly the same value, and probably of the same material, as the micrometer screw of the Washington telescope is 0″.001038 for each degree between −15° and +20° of the scale of Reaumur; or, 0″.00047 for a degree of Fahrenheit between 0° and 77° of that scale. This correction was obtained from measures made, in summer and in winter between the stars 28 and ρ Cephei. An increased number of observations here may lead to a satisfactory correction for temperature for this instrument. Up to the present time none has been applied.

The differences in right ascension and declination between any two objects, found by the instrument, are corrected for difference of refraction by the formulæ and tables of Bessel, (Astronomische Untersuchungen B^d I. p. 188;) using the following notation:

α, α'; δ, δ' = the right ascensions and declinations of the two bodies;

$\alpha_0 = \dfrac{\alpha + \alpha'}{2}$

$\delta_0 = \dfrac{\delta + \delta'}{2}$

H = the hour angle of the point where right ascension and declination is α_0 and δ_0;

Z = the zenith distance of the same point; and

χ = the logarithm of the factor corresponding with it from Bessel's table III, (Astronomische Untersuchungen B^d I, p. 198.)

L = the latitude;

N and M the sides of the right-angled triangle made by the meridian, the hour circle containing the point α_0, δ_0, and a vertical circle perpendicular to it; and

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$\Delta\alpha$, $\Delta\delta$ the required corrections; then

$$\Delta\delta \text{ (in seconds of arc)} = \frac{\varkappa \quad (\delta' - \delta)}{\text{Sin}\,(\text{N}+\delta_0)^2}$$

$$\Delta\alpha \text{ (in seconds of time)} = \Delta\delta.\ \frac{\tan \text{M}.}{15}\ \frac{\text{Cos}\,(\text{N} + 2\delta_0)}{\text{Cos}\ \delta_0{}^2.}$$

These values have been tabulated for a constant value of $(\delta' - \delta,)$ equal to $600''$, with arguments of H and δ_0.

The corrections for parallax are computed from the following formulæ, where L′ denotes the geocentric latitude, M′ and N′ quantities analogous to M and N of the preceding formulæ; π the horizontal parallax of the body, and $\Delta\alpha$, $\Delta\delta$ the required corrections; then

$\text{Tan N}' = \cot \text{L}' \cos \text{H}$;

$\text{Sin M}' = \text{cosin L}' \sin \text{H}$;

$\Delta\alpha$ (in seconds of time) $= \pi\ \frac{1}{15} \sin \text{M}' \sec \delta$;

$\Delta\delta$ (in seconds of arc) $= \pi \cos \text{M}' \cos (\text{N}' + \delta.)$

These values have also been tabulated for a constant value of π equal to $10''$. A portion of these tables will be found in Table IV, page 433.

In observations of stars which are more than 10° from the zenith and south of it, + on the micrometer scale is — in declination. The contrary rule applies to stars north of the zenith. In stars of less than 10° of zenith distance the rule is arbitrary, and is indicated in the notes.

In the observations with the equatorial of recently discovered comets and asteroids, which have of late years made so very considerable a portion of the business of astronomers, it is necessary that the places of the stars, with which they are compared, should be fixed by observations at the time of comparison, or as near to it as practicable, otherwise the resulting places given by the equatorial remain affected by the accidental errors of the catalogues, as well as by the proper motion of the stars themselves, an element which in most cases is undetermined, in nearly all is uncertain, and in some is quite large. It is also desirable, and sometimes necessary, that the stars of comparison be taken as near as possible to the bodies with which they are compared, and for this reason stars have occasionally been used which are not found in any catalogue, while, at the same time, they are of a magnitude too low to be seen in the fixed instruments of the Observatory. In many such cases new determinations at the times of comparison have not been practicable, either by observations with the meridian instruments or by further comparisons with the equatorial. It is intended to supply them, when wanting, in the year next ensuing.

In addition to the stars used for comparison, in observations of newly discovered bodies, it has not unfrequently occurred, in the more general examinations made with this instrument, that other unknown stars have been met with, whose places, first approximately found in the equatorial, were subsequently determined by observations with the meridian instruments, thus augmenting in no inconsiderable degree the number of known stars. A catalogue of all the stars of comparison thus observed between the years 1849 and 1861 will be found page 345.

By the methods in general use, and by which the observations of 1861 have been made, the differences in right ascension being found in time, and those of declination measured by the micrometer, (the unit of measure being as 1 to 15,) the two resulting ordinates are not of equal accuracy. Moreover, the one observation is of an instantaneous phenomenon—the passage of a star across a wire; whilst the other has a duration of some seconds, in which the star may be followed in its passage, and more accurately bisected at a determinate point in the field. After electricity had been applied to recording the instants of astronomical phenomena, and for the purpose of increasing the accuracy of these observations, fifteen transit wires were placed in the diaphragm at intervals of about 3 seconds; but the light thus intercepted and dispersed in the field rendered all stars of less than the tenth magnitude invisible, and ten of the wires were removed. The measurement by distance and angle of position, which avoids the objection to the more common method just stated, can only be resorted to when both stars are in the field together, and is therefore of very limited application. It has been used in all cases where the circumstances permitted.

The transits have been recorded by a chronograph, in which the usual control by means of friction is

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further regulated by a short pendulum and spring governor. The instrument is on the plan of Mr. W. C. Bond, of Boston, and was constructed by him. On it the times are recorded accurately to tenths of seconds.

Explanation of the printed observations.

Column 1 contains the date; column 2, the names of the objects compared; columns 3, 4, and 5, the seconds of the transits; column 6, the mean of these transits, with the hour and minute prefixed; column 7, the micrometer reading; columns 8 and 9, the observed differences in α and δ, the first expressed in minutes and seconds, the second in revolutions and decimals; column 10, or the remainder of the page, contains—

The correction of the chronometer;

The apparent place of the comparison-star at the time of observation;

The mean of the corrected times (either sidereal or mean) of observation;

The mean of the observed differences of α and δ between the object compared and the star of comparison; and

The corrections for differences of refraction ($\Delta \rho$) and the correction for parallax (p.)

Where a mean time chronometer has been used in the observations there is added a small correction (Δt) to reduce the mean to the sidereal interval.

The tabulated results of these observations, (pages 342, 346,) show the mean time at Washington of the observation, and the observed place of the body, corrected for refraction and parallax; also a table of the mean places for 1860.0 of the stars of comparison, with the authorities from which they have been derived.

As connected with the work of the Equatorial, there will be found three additional tables, (pages 349 to 394.)

I. A table of zenith distances to 80° for the latitude of the Observatory, having for arguments the hour angle and declination.

II. A table of differential refraction, with similar arguments extending to 80° of zenith distance, and from +30° to —30° of declination.

III. A catalogue of stars of comparison used in the observations of asteroids and comets between the years 1849 and 1860, and of which one or both ordinates have been determined by the meridian instruments of the Observatory. In this catalogue the places of the stars have been reduced to two epochs, 1850 and 1860, the stars observed before 1855 being referred to the first epoch, and those observed subsequently to the last. The observations upon which they depend have for the most part been made by Professor Yarnall.

IV. Page 433, tables for computing parallax for a horizontal parallax of 10 seconds, with arguments of the hour angle and declination.

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OBSERVATIONS

WITH THE

TRANSIT INSTRUMENT,

1861.

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSITS. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	s.	s.	h. m. s.	s.	
	1		B.	32.69	33.64	34.50	35.42	37.94						
Jan. 4	2	γ Ceti	C.	55.44	56.51	57.33	58.26	59.04	35 57.31	— 0.06	+ 10.36	2 36 7.61	— 4.71	*Y.
	3		D.	16.58	19.21	20.10	20.97	21.89						
	4		B.	15.48	16.39	17.29	18.13	20.72						
	5	σ Arietis	C.	38.66	39.74	40.68	41.64	42.56	43 40.69	0.07	10.36	2 43 50.98	5.04	
	6		D.	0.51	3.31	4.20	5.07	6.05						
	7		B.	27.68	28.59	29.51	30.49	33.06						
	8	α Ceti	C.	50.35	51.47	52.39	53.32	54.21	54 52.34	0.06	10.37	2 55 2.65	4.85	
	9		D.	11.60	14.21	15.19	16.10	17.00						
	10	δ Arietis	C.	30.70	31.86	32.69	33.61	34.50	3 44.54	11.94	10.37	3 3 42.97	5.27	
	11		D.	52.95	55.82	56.80	57.71	58.75						
	12		B.	30.64	31.59	32.44	33.32	35.91						
	13	f^1 Astræa +8° 50′	C.	53.34	54.40	55.36	56.37	57.22	13 55.45	0.06	10.38	3 14 5.76	5.05	
	14		D.	14.71	17.68	18.66	19.57	20.54						
	15		B.	6.00	6.89	7.82	8.61	11.38						
	16	Weisse III, 334	C.	29.11	30.23	31.08	32.08	32.91	19 31.08	0.07	10.38	3 19 41.39	5.19	
	17		D.	50.70	53.52	54.43	55.25	56.15						
	18		B.	21.79	22.80	23.85	24.87	28.03						
	19	B. A. C., 1109	C.	48.69	49.90	51.00	52.13	53.12	28 50.93	0.03	10.39	3 29 1.29	4.29	
	20		D.	13.83	16.80	17.91	19.09	20.12						
	21		B.	24.55	25.48	26.53	27.53	30.46						
	22	B. A. C., 1130	C.	50.20	51.30	52.36	53.44	54.38	32 52.39	0.03	10.39	3 33 2.75	4.37	
	23		D.	14.29	17.32	18.34	19.38	20.30						
	24		B.	38.51	39.62	40.57	41.45	44.34						
	25	B. A. C., 1171	C.	3.21	4.41	5.23	6.39	7.23	40 5.38	0.09	10.39	3 40 15.69	5.68	
	26		D.	26.40	29.45	30.41	31.25	32.31						
	27	(* 6.7) +23° 58′	C.	49.68	50.71	51.61	52.58	53.39	40 51.59	0.07	10.39	3 41 1.91	5.68	
	28	B. A. C., 1182	C.	54.79	55.81	56.62	57.72	58.69	41 9.03	12.35	10.39	3 41 7.07	5.68	
	29		D.	17.80	20.79	21.81	22.69	23.57						
	30		B.	31.74	32.71	33.60	34.49	37.10						
	31	o^1 Eridani	C.	54.68	55.64	56.59	57.47	58.48	4 56.55	0.05	10.41	4 5 6.91	4.92	
	32		D.	15.91	18.63	19.55	20.41	21.29						
	33		B.	48.79	49.81	50.60	51.51	54.41						
	34	B. Z., 393, +21°24′	C.	13.11	14.13	15.12	16.11	16.98	11 15.09	0.08	10.41	4 11 25.42	5.79	
	35		D.	35.67	38.60	39.50	40.47	41.54						
	36		B.	19.89	20.90	21.92	22.97	26.11						
	37	B. Z., 397, +29°10′	C.	45.90	47.04	48.12	49.21	50.18	16 48.10	— 0.10	+ 10.41	4 16 58.41	6.14	
	38		D.	10.06	13.21	14.35	15.31	16.27						
	39		A.	37.07	38.00	39.05	42.05	43.03						
	40		B.	1.89	2.89	3.91	4.87	7.74						
19	41	α Arietis	C.	26.60	27.65	28.40	29.43	30.37	59 28.49	+ 0.03	— 6.67	1 59 21.86	4.63	
	42		D.	49.42	52.34	53.31	54.29	55.22						
	43		E.	14.09	15.08	17.95	18.74	19.88						
	44		A.	14.86	15.89	16.81	19.72	20.79						
	45		B.	39.65	40.68	41.67	42.61	45.55						
	46	Moon's 1st Limb	C.	4.20	5.25	6.16	7.15	7.98	18 6.15	0.03	6 71	2 17 59.48	- - -	
	47		D.	26.93	29.84	30.89	31.82	32.68						
	48		E.	51.45	52.40	55.33	56.33	57.21						
	49		A.	26.78	27.59	28.54	31.22	32.20						
	50		B.	49.66	50.52	51.41	52.21	54.95						
	51	γ Ceti	C.	12.40	13.41	14.25	15.10	15.89	36 14.19	+ 0.03	— 6.74	2 36 7.48	— 4.56	
	52		D.	33.33	36.15	37.00	38.10	38.85						
	53		E.	56.19	57.05	59.75	0.63	1.48						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s	s.	s.	s.
Jan. 4, 3.2	+ 10.38	+ 0.034	+ 0.014	— 0.064	— 0.068
19, 3.0	— 6.80	— 0.120	+ 0.017	0.000	— 0.015

* Y. Professor Yarnall.

Jan. 4. } *r.* Image east 0.04. Clp. west.
4*h* 25*m*. } Image west 0.03. Clp. east.

Jan. 19. Mr. Wurdeman put in a new set of wires in the old scores, leaving out the diagonal wires.

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSITS. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	s.	s.	h. m. s.	s.	
	1		A.	3.74	4.78	5.71	8.72	9.89						
	2		B.	29.28	30.23	31.21	32.32	35.39						
Jan. 19	3	41 Arietis	C.	54.88	55.94	56.88	57.88	58.81	41 56.81	+ 0.03	— 6.75	2 41 50.09	— 5.11	Y.
	4		D.	18.30	21.35	22.40	23.43	24.37						
	5		E.	43.71	44.75	47.85	48.74	49.72						
	6		A.	54.21	55.14	56.08	58.89	59.99						
	7		B.	18.13	19.13	20.13	21.01	23.80						
	8	ρ^3 Arietis	C.	42.18	43.18	44.01	44.91	45.86	48 43.97	+ 0.03	6.77	2 48 37.24	4.94	
	9		D.	4.12	7.10	7.99	8.89	9.76						
	10		E.	28.04	28.93	31.73	32.54	33.47						
	11		C.	22.48	23.58	24.49	25.41	26.40						
	12	ε Arietis	D.	45.09	47.94	48.88	49.87	50.72	51 48.46	— 23.96	6.77	2 51 17.73	5.04	
	13		E.	9.32	10.34	13.18	14.14	15.10						
	14		A.	21.69	22.60	23.52	26.15	27.10						
	15		B.	44.62	45.56	46.49	47.40	50.11						
	†16	α Ceti	C.	7.56	8.52	9.39	10.21	11.10	55 9.26	+ 0.03	6.78	2 55 2.51	4.69	
	17		D.	28.45	31.19	32.19	33.05	33.88						
	18		E.	51.40	52.14	54.84	55.74	56.64						
	19		A.	55.12	55.99	56.94	59.92	0.79						
	20		B.	19.05	20.10	21.11	21.90	24.75						
	21	53 Arietis	C.	42.92	43.88	44.83	45.80	46.71	59 44.81	0.03	6.79	2 59 38.05	5.02	
	22		D.	4.93	7.83	8.70	9.64	10.59						
	23		E.	28.70	29.69	32.55	33.45	34.36						
	24		B.	23.58	24.51	25.49	26.48	29.41						
	25	δ Arietis	C.	47.70	48.68	49.61	50.57	51.46	3 49.64	0.00	6.80	3 3 42.84	5.12	
	26		D.	10.04	12.85	13.73	14.80	15.67						
	27		B.	37.20	38.18	39.20	40.09	43.00						
	28	ζ Arietis	C.	1.52	2.54	3.48	4.48	5.39	7 3.51	0.00	6.80	3 6 56.71	5.16	
	29		D.	24.06	27.00	27.91	28.88	29.77						
	30		A.	21.12	22.38	23.81	27.92	28.55						
	31		B.	56.26	57.55	59.05	0.40	4.40						
	32	α Persei	C.	31.15	32.70	33.86	35.28	36.71	14 33.88	+ 0.04	6.82	3 14 27.10	6.43	
	33		D.	3.37	7.75	8.91	10.39	11.67						
	34		E.	38.49	39.77	43.80	45.19	46.48						
	35		C.	44.31	45.37	46.37	47.30	48.30						
	36	17 Tauri	D.	7.16	10.21	11.24	12.21	13.18	37 10.79	— 24.46	6.86	3 36 39.47	5.51	
	37		E.	32.18	33.19	36.00	37.00	37.90						
	38		B.	55.48	56.40	57.51	58.49	1.37						
	39	η Tauri	C.	20.42	21.49	22.33	23.31	24.28	39 22.38	0.00	6.86	3 39 15.51	5.53	
	40		D.	43.46	46.37	47.32	48.29	49.15						
	41		B.	36.10	37.11	38.12	38.99	41.92						
	42	27 Tauri	C.	0.88	1.91	2.86	3.84	4.74	41 2.90	0.00	6.87	3 40 56.03	5.54	
	43		D.	23.81	26.91	27.78	28.80	29.72						
	44		C.	11.87	12.82	13.77	14.60	15.47						
	45	o^1 Eridani	D.	32.91	35.80	36.77	37.70	38.51	5 36.30	— 22.58	6.92	4 5 6.80	4.80	
	46		E.	55.88	56.91	59.62	0.51	1.39						
	47		A.	16.58	17.65	18.50	21.39	22.36						
	48		B.	40.89	41.79	42.80	43.75	46.60						
20	49	β Arietis	C.	5.29	6.24	7.07	7.97	8.85	47 7.07	+ 0.09	— 8.03	1 46 59.13	— 4.45	
	50		D.	27.49	30.50	31.40	32.40	33.20						
	51		E.	51.89	52.70	55.55	56.43	57.31						

16. Unsteady.

Jan. 19. Image 0.60 r. Clp. west.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m.	n.	c.
h.	s.	s.	s.	s.	s.
Jan. 19, 3.0	— 6.80	— 0.120	+ 0.017	0.000	— 0.015
20, 2.6	— 8.03	+ .009	+ 0.078	0.000	— 0.015

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSITS. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	s.	s.	h. m. s.	s.	
	1		B.	10.84	11.80	12.75	13.49	16.05						
Jan. 20	2	Weisse I, 963	C.	33.60	34.40	35.21	36.18	36.95	54 35.33	+ 0.06	— 8.03	1 54 27.36	— 4.31	Y.
	3		D.	54.48	57.22	58.11	58.95	59.90						
	4		A.	38.30	39.30	40.18	43.19	44.21						
	5		B.	3.25	4.16	5.12	6.14	9.09						
	6	α Arietis	C.	27.91	28.93	29.91	30.75	31.73	59 29.80	+ 0.10	8.03	1 59 21.86	4.61	
	7		D.	50.56	53.68	54.51	55.51	56.43						
	8		E.	15.30	16.30	19.30	20.15	21.05						
	9		C.	1.56	2.81	4.09	5.37	6.79						
	10	A. Z., 145, 126	D.	33.17	37.35	38.66	40.12	41.48	3 38.13	—34.04	8.03	2 2 56.06	5.20	
	11		E.	7.80	9.28	13.11	14.50	15.88						
	12		B.	15.88	16.82	17.71	18.52	21.38						
	13	Weisse II, 112	C.	38.71	39.72	40.61	41.48	42.40	8 40.65	+ 0.06	8.03	2 8 32.68	4.41	
	14		D.	0.37	2.61	3.66	4.50	5.40						
	15		C.	27.49	28.49	29.33	30.26	31.19						
	16	Weisse II, 158	D.	48.74	51.49	52.45	53.38	54.21	11 51.96	—22.54	8.03	2 11 21.40	4.47	
	17		E.	11.59	12.53	15.22	16.11	16.99						
	18		B.	47.28	49.45	51.80	53.89	1.05						
	19	B. A. C., 744	C.	44.87	47.35	49.52	51.80	54.03	17 49.53	+ 0.04	8.03	2 17 41.54	6.61	
	20		D.	38.11	45.14	47.34	49.62	51.66						
	21		C.	53.91	54.73	55.60	56.52	57.40						
	22	ξ^2 Ceti	D.	15.11	17.81	18.62	19.58	20.43	21 18.26	—22.53	8.03	2 20 47.70	4.54	
	23		E.	37.89	38.84	41.64	42.50	43.38						
	24		B.	51.70	52.70	53.79	54.80	58.19						
	25	B. A. C., 809	C.	19.51	20.69	21.70	22.62	23.78	31 21.63	+ 0.06	8.03	2 31 13.67	3.83	
	26		D.	45.11	48.41	49.49	50.50	51.53						
	27		B.	50.94	51.82	52.70	53.60	56.31						
	28	γ Ceti	C.	13.66	14.65	15.49	16.40	17.21	36 15.44	0.06	8.03	2 36 7.48	4.54	
	29		D.	34.71	37.41	38.35	39.27	40.11						
	30		A.	4.91	5.95	6.92	9.91	11.06						
	31		B.	30.58	31.64	32.62	33.57	36.62						
	32	41 Arietis	C.	56.04	57.06	57.98	58.97	59.93	41 58.02	+ 0.10	8.02	2 41 50.09	5.09	
	33		D.	19.48	22.74	23.64	24.61	25.61						
	34		E.	44.93	45.93	49.06	49.91	50.85						
	35	B. A. C., 894	D.	35.06	38.22	39.32	40.33	41.40	46 51.94	—39.30	8.02	2 46 4.61	3.96	
	36		E.	1.81	2.78	5.87	6.80	7.79						
	37		A.	34.79	35.86	36.75	39.73	40.79						
	38		B.	59.46	0.38	1.37	2.28	5.31						
	39	ε Arietis	C.	23.74	24.79	25.75	26.65	27.52	51 25.67	+ 0.09	8.02	2 51 17.74	5.03	
	40		D.	46.20	49.13	50.11	51.12	52.10						
	41		E.	10.55	11.49	14.35	15.24	16.21						
	42		B.	8.38	9.35	10.31	11.22	14.27						
	43	B. Z., 27, +22° 29′	C.	32.96	34.00	34.81	35.81	36.79	55 34.93	0.06	8.02	2 55 26.97	5.11	
	44		D.	55.70	58.70	59.60	0.54	1.50						
	45		A.	0.43	1.50	2.37	5.35	6.39						
	46		B.	24.66	25.67	26.68	27.61	30.51						
	47	δ Arietis	C.	48.84	49.78	50.74	51.68	52.55	3 50.73	+ 0.09	8.02	3 3 42.81	5.10	
	48		D.	11.05	13.97	14.93	15.91	16.84						
	49		E.	35.20	36.27	38.91	39.80	40.72						
	50		C.	2.65	3.66	4.58	5.61	6.49						
	51	ζ Arietis	D	25.08	28.05	28.99	29.94	30.91	7 28.55	—23.86	— 8.02	3 6 56.67	— 5.16	
	52		E.	49.42	50.40	53.23	54.14	55.13						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
Jan. 20, 2.6	— 8.03	+ 0.009	+ 0.078	0.000	— 0.015

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSITS. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s	s.	s.	s.	m. s.	s.	s.	h. m. s.	s.	
	1		A.	54.87	55.80	56.89	59.85	0.73						
	2		B.	20.14	21.12	22.17	23.11	26.08						
Jan. 20	† 3	Moon's 1st Limb	C.	45.44	46.51	47.41	48.32	49.27	9 47.30	+ 0.10	— 8.02	3 9 39.38	- - -	Y.
	4		D.	8.46	11.66	12.61	13.58	14.49						
	5		E.	33.71	34.67	37.63	38.56	39.48						
	6	g^1 Astræ, +8° 42′	E.	12.15	13.00	15.84	16.74	17.59	15 15.06	—45.25	8.02	3 14 21.79	— 4.91	
	7		C.	49.53	50.46	51.41	52.28	53.17						
	† 8	(* 8.9) +12° 15′	D.	10.88	13.71	14.62	15.51	16.39	21 14.23	—22.86	8.02	3 20 43.35	5.04	
	9		E.	34.26	35.12	37.83	38.66	39.59						
	10		B.	30.82	31.82	32.85	33.92	36.89						
	11	9 Tauri	C.	55.73	56.63	57.63	58.63	59.68	28 57.67	+ 0.06	8.02	3 28 49.72	5.42	
	12		D.	18.43	21.43	22.47	23.43	24.37						
	13		A.	31.64	32.61	33.56	36.48	37.53						
	14		B.	56.76	57.66	58.64	59.61	2.55						
	15	B. A. C., 1164	C.	21.51	22.58	23.52	24.53	25.40	39 23.45	0.10	8.02	3 39 15.53	5.51	
	16		D.	44.48	47.40	48.41	49.43	50.27						
	17		E.	9.24	10.26	13.12	14.06	15.01						
	18		B.	48.69	49.63	50.58	51.51	54.59						
	19	η Tauri	C.	13.47	14.50	15.35	16.35	17.34	39 15.42	0.06	8.02	3 39 7.47	5.51	
	20		D.	36.33	39.35	40.32	41.24	42.13						
	21	27 Tauri	B.	37.18	38.12	39.12	40.08	43.06	40 51.78	+12.30	8.02	3 40 56.06	5.53	
	22		C.	2.15	3.00	4.05	5.11	5.93						
	23	28 Tauri	D.	26.14	29.19	30.19	31.14	32.12	41 41.92	—36.64	8.02	3 40 57.27	5.53	
	24		E.	51.05	51.97	54.87	55.80	56.77						
	25		A.	54.84	55.92	56.96	59.84	0.97						
	26		B.	19.82	20.89	21.89	22.86	25.76						
21	27	17 Tauri	C.	44.79	45.73	46.81	47.69	48.70	36 46.75	+ 0.09	7.32	3 36 39.52	5.48	
	28		D.	7.54	10.65	11.67	12.69	13.54						
	29		E.	32.59	33.50	36.49	37.28	38.29						
	30		A.	31.11	31.98	32.93	35.79	36.85						
	31		B.	56.05	56.95	57.87	58.87	1.89						
	32	B. A. C., 1164	C.	20.80	21.82	22.70	23.74	24.77	39 22.77	0.09	7.32	3 39 15.55	5.50	
	33		D.	43.73	46.93	47.80	48.66	49.61						
	34		E.	8.54	9.59	12.53	13.44	14.35						
	35		B.	47.91	48.89	49.80	50.81	53.79						
	36	η Tauri	C.	12.86	13.88	14.77	15.67	16.57	39 14.74	0.06	7.32	3 39 7.48	5.50	
	37		D.	35.72	38.60	39.61	40.63	41.61						
	38	27 Tauri	B.	36.50	37.37	38.49	39.41	42.23	40 51.05	+12.29	7.32	3 40 56.02	5.51	
	39		C.	1.29	2.39	3.29	4.26	5.24						
	40	28 Tauri	D.	25.40	28.41	29.41	30.41	32.36	41 41.27	—36.64	7.32	3 40 57.31	5.52	
	41		E.	50.22	51.21	54.16	55.08	56.09						
	42		A.	52.79	53.81	54.70	57.39	58.45						
	43		B.	16.45	17.30	18.27	19.12	21.83						
	44	γ^1 Eridani	C.	39.89	40.73	41.61	42.59	43.43	51 41.66	+ 0.17	7.32	3 51 34.51	4.58	
	45		D.	1.47	4.29	5.22	6.14	7.03						
	46		E.	24.81	25.85	28.59	29.38	30.41						
	47		B.	11.60	12.68	13.61	14.59	17.48						
	48	A^1 Tauri	C.	36.26	37.23	38.13	39.11	39.98	56 38.14	0.06	7.32	3 56 30.88	— 5.57	
	49		D.	58.75	1.72	2.70	3.69	4.53						
	50		A.	3.25	4.25	5.27	8.38	9.49						
	51		B.	29.19	30.14	31.13	32.07	35.26						
	52	Moon's 1st Limb	C.	54.81	55.78	56.83	57.74	58.78	4 56.82	+ 0.09	— 7.33	4 4 49.58	- - -	
	53		D.	18.48	21.61	22.59	23.63	24.61						
	54		E.	44.35	45.30	48.19	49.16	50.15						

3. Steady.
8. Preceded by a star (6) nearly same declination.
Jan. 20. *r.*
4*h.* Image west 0.06. Clp. west.
Jan. 21. The correction for azimuth from δ Ursæ Minoris S. P. and 51 (Hev.) Cephei. The mean Right Ascension of 51 (Hev.) Cephei used during the year is for 1860.0, 6*h.* 33*m.* 38.52*s.*

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h. Jan. 21, 5.4	s. — 7.35	s. — 0.018	s. + 0.125	s. — 0.112	s. — 0.015

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSITS. I.	II	III.	IV.	V.	Mean.	CORRECTIONS. Inst	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s	s.	s.	h. m. s.	s.	
	1		B.	50.33	51.26	52.29	53.16	56.08						
Jan. 21	2	ω^2 Tauri - - - - -	C.	14.58	15.57	16.41	17.40	18.34	9 16.49	+ 0.07	— 7.33	4 9 9.23	— 5.61	Y.
	3		D.	36.88	39.82	40.81	41.81	42.67						
	4		A.	14.86	15.95	16.82	19.58	20.60						
	5		B.	38.85	39.82	40.79	41.69	44.56						
	6	δ^1 Tauri - - - - -	C.	2.71	3.72	4.54	5.55	6.41	14 4.58	0.11	7.33	4 14 57.36	5.55	
	7		D.	24.75	27.58	28.58	29.48	30.31						
	8		E.	48.60	49.48	52.13	53.13	54.10						
	9		B.	42.41	43.39	44.39	45.37	48.33						
	10	υ^1 Tauri - - - - -	C.	7.12	8.06	9.08	9.93	10.93	18 9.11	0.06	7.33	4 18 1.84	5.76	
	11		D.	29.78	32.85	33.72	34.73	35.59						
	12		A.	49.34	50.42	51.37	54.17	55.22						
	13		B.	13.61	14.56	15.54	16.49	19.21						
	14	ε Tauri - - - - -	C.	37.69	38.59	39.55	40.48	41.44	20 39.54	0.10	7.33	4 20 32.31	5.64	
	15		D.	59.76	2.70	3.70	4.63	5.51						
	16		E.	23.91	24.90	27.68	28.50	29.46						
	17		B.	33.31	34.34	35.38	36.41	39.43						
	†18	(☉9) +29° 5′ - - -	C.	59.69	0.64	1.60	2.62	3.49	30 1.56	0.04	7.33	4 29 54.27	6.12	
	19		D.	23.61	26.78	27.75	28.70	29.64						
	20		B.	42.30	43.27	44.22	45.13	47.93						
	21	Weisse IV, 754 - -	C.	5.21	6.09	6.95	7.88	8.73	35 6.98	0.10	7.33	4 34 59.75	5.19	
	22		D.	26.08	28.86	29.79	30.74	31.60						
	23		B.	20.49	21.41	22.40	23.23	25.98						
	24	x 1st Comet, '53 —1° 37′	C.	43.38	44.36	45.11	45.95	46.84	41 45.16	0.11	7.34	4 41 37.94	5.09	
	25		D.	4.40	7.12	8.11	8.89	9.73						
	26		B.	13.57	14.58	15.64	16.51	- -						
	†27	B. Z., 393, 120, +22° 30′	C.	38.26	39.41	40.22	41.18	42.06	45 39.99	+ 0.35	7.34	4 45 33.01	5.94	
	28		D.	1.08	4.23	5.09	6.04	6.97						
	29		C.	48.79	49.78	50.81	51.81	52.82	56 3.81	—12.93	7.34	4 55 43.54	6.36	
	30	(*8. 9) +30° 11′ - -	D.	12.98	16.11	17.26	18.32	19.39						
	31	(*8) +30° 11′ . - -	E.	40.46	41.60	44.79	45.87	46.72	56 43.89	51.77	7.34	4 55 44.77	6.36	
	32		C.	50.73	51.72	52.72	53.79	54.75						
	33	B. Z., 513, +30° 14′ -	D.	14.89	18.14	19.19	20.34	21.38	4 18.72	—25.89	7.34	5 3 45.49	6.41	
	34		E.	41.25	42.41	45.52	46.49	47.55						
	35		B.	36.04	37.07	37.95	38.73	41.59						
	36	β Orionis . - - - - -	C.	59.11	0.10	0.91	1.82	2.64	8 0.94	+ 0.14	7.34	5 7 53.73	5.00	
	37		D.	20.40	23.05	24.01	24.91	25.75						
	38		A.	46.22	47.28	48.32	51.34	52.50						
	39		B.	12.24	13.25	14.32	15.31	18.30						
	40	β Tauri - - - - -	C.	38.18	39.31	40.27	41.19	42.13	17 40.18	0.08	7.35	5 17 32.91	6.41	
	41		D.	2.11	5.10	6.13	7.18	8.11						
	42		E.	27.98	29.06	31.97	32.87	33.75						
	43		B.	38.06	39.08	40.15	41.12	44.28						
	44	B. Z., 513, +30° 47′ -	C.	4.60	5.71	6.70	7.69	8.78	23 6.70	0.04	7.35	5 22 59.39	6.56	
	45		D.	29.00	32.19	33.32	34.39	35.42						
	46		B	46.20	47.21	48.19	49.18	52.52						
	47	B. Z., 513, +31° 2′ .	C.	12.69	13.69	14.61	15.67	16.67	27 14.76	+ 0.04	7.35	5 27 7.45	6.59	
	48		D.	37.12	40.47	41.48	42.39	43.39						
	49		C.	25.43	26.54	27.55	28.59	29.50						
	50	B. Z., 405, +26° 30′ -	D.	49.00	52.10	53.00	54.07	54.93	30 52.60	—24.98	— 7.35	5 30 20.27	— 6.37	
	51		E.	14.59	15.51	18.34	19.40	20.45						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m.	n.	c.
h.	s.	s.	s.	s.	s.
Jan. 21, 5.4	— 7.35	— 0.018	+ 0.125	— 0.112	— 0.015

18. The seconds are according to the fillet, but I think that they are 10*s*. too great.
27. Dim.

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSITS. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	s.	s.	h. m. s.	s.	
	1		C.	44.18	45.30	46.30	47.50	48.50						
Jan. 21	2	α Columbæ - - - -	D.	9.49	12.93	14.00	15.10	16.07	35 13.46	—26.89	— 7.35	5 34 39.21	— 4.34	Y.
	3		E.	37.04	38.14	41.40	42.41	43.44						
	4		B.	42.29	43.31	44.38	45.25	48.30						
	5	B. Z., 405, +26° 26′ -	C.	7.59	8.81	9.64	10.51	11.51	47 9.66	+ 0.05	7.36	5 47 2.36	6.44	
	6		D.	30.97	34.12	35.08	36.11	37.07						
	7	B. Z., 346, +20° 3′ -	B.	31.23	32.26	33.15	34.15	36.91	51 45.43	+12.00	7.36	5 51 50.07	6.16	
	8		C.	55.38	56.38	57.35	58.25	59.24						
	9	B. Z., 346, +20° 2′ -	C.	10.15	11.09	12.08	13.06	13.98	52 24.00	—11.86	7.36	5 52 4.78	6.16	
	10		D.	32.36	35.37	36.36	37.36	38.29						
	11		B.	24.18	25.30	26.33	27.31	30.39						
	12	B. Z., 525, +31° 16′ -	C.	50.86	51.92	52.82	53.95	54.87	2 52.90	+ 0.04	7.36	6 2 45.58	— 6.77	
	13		D.	15.21	18.56	19.58	20.61	21.62						
	14		B.	43.00	27.50	12.00	47.50	10.50						
	15	δ Ursæ Minoris, S. P. -	C.	18.00	3.00	- -	32.00	17.50	16 53.52	— 4.11	7.36	6 16 42.05	+ 47.52	
	16		D.	25.00	39.00	22.50	- -	- -						
	17		C.	9.50	10.68	11.79	13.01	14.12						
	18	B. A. C., 2155 - - -	D.	36.73	40.22	41.35	42.35	43.45	29 40.82	29.03	7.37	6 29 4.41	— 7.42	
	19		E.	6.13	7.28	10.79	11.81	12.93						
	20	51 (Hev.) Cephei - - -	C.	20.00	39.00	55.50	16.00	33.00	34 56.70	— 2.56	7.37	6 34 46.77	69.09	
	21		B.	6.37	7.39	8.48	9.53	13.32						
	22	B. A. C., 2235 - - -	C	35.59	36.82	37.85	39.08	40.19	43 37.83	+ 0.01	7.37	6 43 30.47	7.52	
	23		D.	2.44	5.95	6.95	8.12	9.32						
	24		A.	25.20	26.23	27.24	30.36	31.40						
	25		B.	51.28	52.36	53.35	54.36	57.57						
	26	ε Canis Majoris - - -	C.	17.40	18.51	19.41	20.42	21.36	53 19.41	0.20	7.38	6 53 12.24	4.71	
	27		D.	41.40	44.43	45.57	46.49	47.52						
	28		E.	7.29	8.31	11.26	12.28	13.21						
	29		A.	48.48	49.50	50.42	53.19	54.19						
	30		B.	12.32	13.20	14.21	15.12	17.85						
	31	γ Canis Majoris - - -	C.	35.95	36.89	37.74	38.71	39.61	57 37.74	0.17	7.38	6 57 30.53	5.10	
	32		D.	57.53	0.45	1.33	2.26	3.18						
	33		E.	21.19	22.20	25.00	25.98	26.93						
	34		A.	53.23	54.23	55.21	57.58	58.85						
	35		B.	16.77	17.72	18.67	19.58	22.32						
22	36	γ^1 Eridani - - - - -	C.	39.98	41.06	42.08	43.00	43.94	51 42.03	+ 0.39	7.86	3 51 34.56	4.55	*R.
	37		D.	1.79	4.51	5.48	6.41	7.33						
	38		E.	25.31	26.28	28.81	29.83	30.79						
	39		C.	36.40	37.50	38.50	39.39	40.32						
	†40	A^1 Tauri - - - - -	D.	59.25	2.03	3.07	4.00	4.94	57 2.59	—23.90	7.85	3 56 30.84	5.57	
	41		E.	23.53	24.50	27.50	28.48	29.43						
	42		A.	26.62	27.58	28.47	31.10	32.09						
	43		B.	49.49	50.47	51.40	52.34	54.96						
	44	o^1 Eridani - - - - -	C.	12.49	13.42	14.39	15.30	16.21	5 14.35	+ 0.36	7.84	4 5 6.87	4.78	
	45		D.	33.59	36.40	37.32	38.27	39.21						
	46		E.	56.67	57.50	0.23	1.21	2.09						
	47		A.	49.69	50.62	51.61	54.43	55.43						
	48		B.	13.94	14.86	15.77	16.82	19.61						
	49	ε Tauri - - - - -	C.	38.00	39.00	39.89	40.81	41.81	20 39.90	+ 0.26	— 7.82	4 20 32.33	— 5.64	
	50		D.	0.18	3.11	4.08	5.08	5.98						
	51		E.	24.31	25.29	28.05	29.02	30.00						

* R. Professor Robinson.
40. Very unsteady. *r.*
Jan. 21. } Image 0.00. Clp. west.
7*h.* 10*m.* } Image west 0.13. Clp. east.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
Jan. 21, 5.4	— 7.35	— 0.018	+ 0.125	— 0.112	— 0.015
22, 5.0	— 7.78	+ 0.071	+ 0.316	— 0.218	— 0.015

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSITS. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	s.	s.	h. m. s.		
	1		A.	17.00	18.10	19.05	21.83	22.81						
	2		B.	40.93	41.91	42.81	43.73	46.60						
Jan. 22	3	α Tauri - - - - -	C.	4.63	5.57	6.50	7.42	8.31	28 6.52	+ 0.27	— 7.81	4 27 58.98	— 5.59	R.
	4		D.	26.51	29.29	30.32	31.31	32.27						
	5		E.	50.27	51.29	53.92	54.85	55.82						
	6		A.	10.62	11.56	12.50	15.55	16.88						
	7		B.	37.58	38.59	39.60	40.59	43.96						
	†8	ι Aurigæ - - - - -	C.	4.58	5.82	6.81	7.81	8.82	48 6.79	0.19	7.79	4 47 59.19	6.44	
	9		D.	29.57	32.82	34.10	35.12	36.21						
	10		E.	56.77	57.80	1.11	2.03	3.00						
	11		A.	26.50	27.51	28.52	31.73	32.80						
	12		B.	52.50	53.43	54.45	55.51	59.07						
	13	Moon's 1st Limb - -	C.	18.60	19.59	20.59	21.62	22.75	3 20.62	0.24	7.77	5 3 13.08	- - -	
	14		D.	42.52	45.90	46.91	47.78	48.69						
	15		E.	8.59	9.51	12.52	13.48	14.41						
	16		A.	46.48	47.48	48.48	51.55	52.56						
	17		B.	12.47	13.55	14.52	15.59	18.58						
	18	β Tauri - - - - -	C.	38.57	39.60	40.56	41.49	42.47	17 40.45	0.22	7.76	5 17 32.91	6.40	
	19		D.	2.45	5.46	6.42	7.41	8.38						
	20		E.	28.18	29.21	32.11	33.33	34.32						
	21		A.	39.39	40.62	41.53	44.40	45.43						
	22		B.	4.14	5.13	6.09	6.99	9.57						
	†23	ζ Tauri - - - - -	C.	28.47	29.44	30.39	31.41	32.38	29 30.35	0.25	7.74	5 29 22.85	6.11	
	24		D.	50.74	53.70	54.68	55.71	56.65						
	25		E.	15.25	16.35	19.08	20.08	21.08						
	26		A.	49.30	50.43	51.50	54.60	55.81						
	27		B.	17.09	18.11	19.20	20.21	23.73						
	28	α Columbæ - - - -	C.	44.56	45.53	46.58	47.68	48.78	34 46.64	0.48	7.73	5 34 39.40	4.33	
	29		D.	9.98	13.29	14.30	15.33	16.36						
	30		E.	37.41	38.41	41.61	42.62	43.70						
	31		B.	17.98	19.07	20.07	21.07	24.30						
	32	136 Tauri - - - - -	C.	43.79	44.79	45.73	46.68	47.67	44 45.71	0.19	7.72	5 44 38.17	6.49	
	33		D.	7.52	10.48	11.49	12.50	13.56						
	34		B.	23.65	24.65	25.69	26.70	29.51						
	35	1 Geminorum - - -	C.	48.48	49.46	50.43	51.40	52.39	55 50.46	0.21	7.71	5 55 42.96	6.32	
	36		D.	11.32	14.33	15.33	16.29	17.31						
	37		A.	58.93	59.97	0.92	3.98	5.08						
	38		B.	22.65	23.59	24.59	25.51	28.45						
	†39	ν Orionis - - - - -	C.	46.40	47.38	48.30	49.29	50.30	59 48.14	0.27	7.71	5 59 40.71	— 5.97	
	40		D.	7.61	10.73	11.68	12.63	13.58						
	41		E.	31.51	32.43	35.09	36.08	36.94						
	42	δ Ursæ Minoris, S. P. -	C.	17.00	1.00	47.00	31.00	17.00	16 46.60	+ 4.27	7.69	6 16 43.18	+ 47.41	
	†43	51 (Hev.) Cephei - - -	C.	21.00	42.00	1.00	19.00	37.00	35 0.00	— 4.58	7.66	6 34 47.76	— 69.03	
	44		B.	45.50	46.47	47.47	48.43	51.18						
	45	Sirius - - - - -	C.	9.26	10.28	11.22	12.20	13.11	39 11.18	+ 0.36	7.66	6 39 3.88	4.99	
	46		D.	31.22	33.90	34.84	35.80	36.78						
	47		A.	23.78	24.72	25.63	28.36	29.30						
	48		B.	46 88	47.86	48.70	49.61	52.35						
29	49	67 Ceti - - - - -	C.	9.83	10.78	11.66	12.53	13.41	10 11.61	+ 0.01	— 7.38	2 10 4.24	— 4.16	Y.
	50		D.	30.88	33.69	34.61	35.49	36.43						
	51		E.	53.90	54.83	57.49	58.37	59.21						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
Jan. 22, 5.0	— 7.78	+ 0.071	+ 0.316	— 0.218	— 0.015
29, 2.8	— 7.44	— 0.087	+ 0.005	+ 0.097	— 0.015

8. Unsteady.
23. Unsteady.
39. Very unsteady.
43. Unsteady. *r.*
Jan. 22. Image 0.12 west. Clamp west.
Mercury steady. Stars generally unsteady.

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	s.	s.	h. m. s.	s.	
	1		A.	7.08	8.05	8.87	11.59	12.52						
	2		B.	30.19	31.05	31.99	32.84	35.53						
Jan. 29	3	ξ^2 Ceti - - - - -	C.	53.14	54.07	54.91	55.81	56.67	20 54.92	+ 0.03	— 7.40	2 20 47.55	— 4.42	Y.
	4		D.	14.28	17.09	17.94	18.90	19.73						
	5		E.	37.31	38.22	40.88	41.71	42.56						
	6		B.	26.64	27.51	28.44	29.32	32.09						
	7	B. A. C., 789 - - -	C.	49.49	50.49	51.40	52.32	53.11	27 51.37	0.00	7.41	2 27 43.96	4.47	
	8		D.	10.63	13.41	14.31	15.27	16.16						
	9		A.	27.26	28.22	29.03	31.72	32.82						
	10		B.	50.21	51.04	52.07	52.85	55.53						
	11	γ Ceti - - - - -	C.	12.91	13.89	14.75	15.61	16.43	36 14.74	+ 0.02	7.42	2 36 7.34	4.45	
	12		D.	34.03	36.78	37.60	38.50	39.36						
	13		E.	56.71	57.68	0.36	1.15	2.06						
	14		C.	38.95	39.94	40.82	41.73	42.65						
	15	Rumker, 755 - - -	D.	0.69	3.63	4.56	5.43	6.26	51 4.06	—23.22	7.44	2 50 33.39	4.80	
	16		E.	24.35	25.15	28.08	28.90	29.78						
	17		B	54.30	55.46	56.59	57.74	1.28						
	18	B. A. C., 953 - - -	C.	23.19	24.43	25.59	26.80	27.82	56 25.63	+ 0.06	7.45	2 56 18.24	5.47	
	19		D.	50.06	53.69	54.68	55.82	56.91						
	20		B.	48.38	49.46	50.59	51.70	55.15						
	21	B. Z., 448, 4, +38° 26′	C.	17.47	18.62	19.69	20.81	21.93	4 19.68	+ 0.06	7.46	3 4 12.28	5.58	
	22		D.	44.06	47.62	48.80	49.87	51.05						
	23	B. Z., 448, 5, +38° 26′	D.	1.29	4.87	5.99	7.03	8.16	5 19.69	—42.84	7.46	3 4 29.39	5.71	
	24		E.	30.46	31.53	34.94	36.07	37.08						
	25		B.	56.52	57.91	59.30	0.69	4.79						
	26	α Persei - - - - -	C.	31.42	32.86	34.24	35.57	36.86	14 34.23	+ 0.09	7.48	3 14 26.84	6.24	
	27		D.	3.61	7.86	9.24	10.61	11.92						
	28		B	5.40	6.49	7.69	8.74	12.27						
	29	B. Z., 508, 94, +37°33′	C.	34.04	35.32	36.29	37.50	38.54	18 36.37	+ 0.06	7.48	3 18 28.94	5.71	
	30		D.	0.48	4.06	5.10	6.21	7.36						
	31		C.	4.07	5.14	6.28	7.28	8.32						
	32	B. Z., 508, 101, +36°59′	D.	30.20	33.67	34.83	35.90	36.92	23 34.38	—27.99	7.49	3 22 58.90	5.74	
	33		E.	58.83	59.91	3.19	4.17	5.20						
	34		B.	42.09	43.14	44.13	45.15	48.15						
	35	B. A. C., 1130 - - -	C.	7.95	9.05	9.93	10.93	11.85	33 9.98	0.06	7.50	3 33 2.41	4.02	
	36		D.	31.70	34.83	35.92	36.92	37.93						
	37		B.	23.31	24.43	25.40	26.44	29.64						
	38	B. A. C., 1150 - - -	C.	50.34	51.49	52.45	53.47	54.43	36 52.43	— 0.07	7.51	3 36 44.85	3.93	
	39		D.	15.18	18.41	19.48	20.50	21.52						
	40		B.	11.48	12.59	13.67	14.72	18.05						
	41	B. Z., 402, 13, +34° 11′	C.	38.95	40.12	41.07	42.22	43.31	42 41.16	+ 0.05	7.52	3 42 33.70	5.84	
	42		D.	4.33	7.68	8.75	9.81	10.73						
	43		A.	53.21	54.07	54.99	57.71	58.68						
	44		B.	16.67	17.60	18.56	19.47	22.27						
	45	γ^1 Eridani - - - - -	C.	40.13	41.12	41.94	42.87	43.78	51 41.96	0.00	7.53	3 51 34.42	4.47	
	46		D.	1.66	4.57	5.46	6.35	7.29						
	47		E.	25.20	26.09	28.89	29.76	30.60						
	48		A.	26.43	27.41	28.27	30.98	31.92						
	49		B.	49.50	50.39	51.32	52.16	54.96						
	50	o^1 Eridani - - - - -	C.	12.43	13.37	14.22	15.15	16.04	5 14.24	+ 0.01	— 7.55	4 5 6.70	— 4.70	
	51		D.	33.58	36.38	37.29	38.17	39.04						
	52		E.	56.58	57.41	0.14	1.00	1.84						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
Jan. 29, 2.8	— 7.44	— 0.087	+ 0.095	+ 0.097	— 0.015

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	s.	s.	h. m. s.	s.	
	1		C.	31.43	32.40	33.35	34.25	35.17						
Jan. 29	2	B. Z., 393, +20° 54′	D	53.96	56.88	57.81	58.71	59.60	7 57.34	—23.96	— 7.55	4 7 25.83	— 5.55	Y.
	3		E.	18.30	19.17	22.10	22.95	24.00						
	4		B.	39.36	40.44	41.34	42.29	45.49						
30	†5	ι Aurigæ	C.	6.38	7.56	8.65	9.61	10.66	48 8.58	+ 0.07	9.57	4 47 59.08	6.36	
	6		D.	31.58	34.75	35.88	36.79	37.88						
	7		B.	41.89	43.45	44.51	45.51	49.36						
	8	c Encke's Comet +45°14′	C.	14.35	15.85	17.04	17.95	19.00	56 16.74	+ 0.02	9.57	4 56 7.18	7.24	
	9		D.	43.43	47.81	49.16	50.35	51.45						
	10		C.	43.90	45.11	45.89	46.78	47.78						
	†11	ε Leporis	D.	6.63	9.85	10.71	11.70	12.67	0 10.20	—24.03	9.57	4 59 36.60	4.47	
	12		E.	31.21	32.34	35.29	36.10	37.07						
	13		B.	4.82	5.78	6.80	7.85	11.00						
	14	B. Z., 513, +30° 12′	C.	31.22	32.33	33.27	34.28	35.32	5 33.27	+ 0.08	9.57	5 5 23.78	6.35	
	15		D.	55.63	58.61	59.70	0.70	1.70						
	16		A.	48.50	49.55	50.42	53.21	54.65						
	17		B.	14.50	15.50	16.60	17.66	20.58						
	18	β Tauri	C.	40.41	41.48	42.40	43.40	44.38	17 42.38	0.13	9.58	5 17 32.93	6.34	
	19		D.	4.21	7.34	8.36	9.39	10.32						
	20		E.	30.15	31.11	34.15	35.15	36.11						
	21		B.	43.00	43.91	44.91	45.79	48.81						
	22	B. A. C., 1742	C.	7.75	8.71	9.72	10.61	11.69	27 9.74	+ 0.11	9.58	5 27 0.27	6.18	
	23		D.	30.74	33.66	34.70	35.60	36.55						
	24		C.	19.51	20.42	21.25	22.07	22.95						
	25	ε Orionis	D.	40.49	42.96	43.93	44.88	45.87	29 43.65	—22.23	9.58	5 29 11.84	5.24	
	26		E.	3.27	4.10	6.87	7.70	8.51						
	27		A.	51.27	52.30	53.31	56.49	57.68						
	28		B.	18.72	19.80	20.90	22.07	25.32						
	29	α Columbæ	C.	46.14	47.40	48.40	49.53	50.52	34 48.40	+ 0.31	9.58	5 34 39.13	4.24	
	30		D.	11.68	15.00	16.03	16.92	18.06						
	31		E.	39.06	40.15	43.48	44.43	45.32						
	32		B.	4.72	5.56	6.39	7.18	10.22						
	33	B. A. C., 1827	C.	28.38	29.19	30.05	30.98	31.80	39 30.03	0.13	9.58	5 39 20.59	5.84	
	34		D.	49.78	52.61	53.57	54.58	55.48						
	35		B.	49.17	50.18	51.12	51.99	55.00						
	36	B. Z., 524, 72 +21° 58′	C.	13.74	14.78	15.76	16.58	17.49	49 15.66	0.11	9.58	5 49 6.19	6.18	
	37		D.	36.35	39.21	40.19	41.23	42.12						
	38		B.	37.16	38.08	39.03	39.87	42.71						
	39	B. A. C., 1930	C.	0.93	1.85	2.80	3.78	4.63	55 2.86	0.12	9.58	5 54 53.41	— 6.04	
	40		D.	23.05	25.89	26.80	27.78	28.62						
	41		B.	45.00	30.00	12.00	58.00	15.00						
	42	δ Ursæ Minoris, S. P.	C.	21.50	5.00	50.50	33.50	20.00	16 49.97	+ 2.93	9.59	18 16 43.31	+ 46.14	
	43		D.	26.00	41.00	25.50	10.00	56.50						
	44		B.	29.00	44.00	5.00	23.00	21.00						
	†45	51 (Hev.) Cephei	C.	26.00	45.00	2.00	22.00	39.00	35 1.23	— 3.21	9.59	6 34 48.43	— 67.87	
	46		D.	40.00	38.00	57.00	16.00	31.50						
	47		A.	27.30	28.39	29.38	32.46	33.61						
	48		B.	53.59	54.61	55.60	56.60	59.67						
	49	ε Canis Majoris	C.	19.41	20.40	21.35	22.30	23.18	53 21.46	+ 0.29	— 9.60	6 53 12.15	— 4.68	
	50		D.	43.42	46.39	47.44	48.41	49.49						
	51		E	9.54	10.53	13.49	14.42	15.41						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
Jan. 30, 6.4	— 9.59	— 0.011	+ 0.188	— 0.148	— 0.015
12.3	— 9.09	— 0.136	- -	- -	- -

5. Unsteady.
11. Stars unsteady.
45. Very unsteady.
Jan. 30. Azimuth cor. from Polaris & θ Virginis.

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	s	s.	h. m. s.	s.	
	1		A.	50.83	51.72	52.71	55.51	56.46						
	2		B.	14.45	15.45	16.42	17.32	20.22						
Jan 30	†3	γ Canis Majoris - - -	C.	38.11	39.06	39.88	40.79	41.78	57 39.93	+ 0.24	— 9.60	6 57 30.57	— 5.10	Y.
	4		D.	59.93	2.62	3.63	4.55	5.48						
	5		E.	23.29	24.20	27.03	27.98	28.87						
	6		A.	14.38	15.20	16.13	18.90	19.85						
	7		B.	37.30	38.20	39.05	39.98	42.68						
	8	υ Leonis - - - - -	C.	0.03	0.94	1.87	2.71	3.50	30 1.78	+ 0.20	9.79	11 29 52.19	5.33	
	9		D.	21.00	23.63	24.61	25.49	26.34						
	10		E.	43.61	44.62	47.30	48.13	49.00						
	11	B. A. C , 3981 - - -	C.	52.08	53.42	54.56	55.84	57.46	39 11.61	—16.94	9.81	11 38 44.86	6.22	
	12		D.	23.71	27.86	29.13	30.41	31.62						
	13		B.	44.53	45.50	46.41	47.23	50.11						
	14	β Leonis - - - - -	C.	8.07	9.05	9.91	10.82	11.71	42 9.98	+ 0.13	9.82	11 42 0.29	5.38	
	15		D.	29.73	32.78	33.69	34.60	35.55						
	16		B.	0.77	2.26	4.08	5.75	10.37						
	17	γ Ursæ Majoris - - -	C.	40.23	41.83	43.20	44.85	46.27	46 43.29	— 0.07	9.83	11 46 33.39	6.40	
	18		D.	16.24	21.04	22.64	24.11	25.73						
	19		B.	26.43	27.42	28.41	29.30	32.58						
	20	B. A. C., 4100 - - -	C.	52.17	53.22	54.22	55.23	56.18	3 54.22	+ 0.09	9.87	12 3 44.44	5.42	
	21		D.	15.89	19.05	20.14	21.08	21.92						
	22		A.	12.09	12.94	13.88	16.50	17.50						
	23		B.	34.90	35.81	36.76	37.61	40.32						
	24	η Virginis - - - - -	C.	57.68	58.63	59.48	0.40	1.25	12 59.46	0.20	9.89	12 12 49.78	5.14	
	25		D.	18.61	21.47	22.29	23.12	24.05						
	26		E.	41.38	42.35	45.07	45.84	46.65						
	27		B.	47.75	48.58	49.58	50.41	53.18						
	28	B. A. C., 4171 - - -	C.	10.63	11.65	12.52	13.49	14.29	16 12.50	0.19	9.89	12 16 2.80	5.14	
	29		D.	31.81	34.58	35.50	36.35	37.21						
	30		A.	0.14	1.06	1.90	4.63	5.64						
	31		B.	23.32	24.16	25.10	26.01	28.90						
	32	q Virginis - - - -	C.	46.35	47.25	48.07	49.01	49.90	26 48.12	0.23	9.92	12 26 38.43	5.08	
	33		D.	7.53	10.47	11.30	12.14	13.00						
	34		E.	30.57	31.47	34.18	35.00	35.89						
	35		B.	33.45	34.35	35.32	36.18	38.88						
	36	28 Virginis - - - -	C	56.40	57.40	58.28	59.21	59.92	34 58.25	0.19	9 94	12 34 48.51	5.06	
	37		D.	17.63	20.28	21.24	22.19	23.05						
	38		A.	11.96	12.85	13.79	16.61	17.63						
	39		B.	35.92	36.71	37.61	38.53	41.25						
	40	Moon's 2d Limb - -	C.	59.50	0.44	1.43	2.38	3.18	47 1.41	0.24	9.96	12 46 51.68	- - -	
	41		D.	21.61	24.32	25.20	26.14	27.18						
	42		E.	45.23	46.21	48.98	49.89	50.70						
	43		A.	9.21	10.21	11.16	13.85	14.74						
	44		B.	32.25	32.96	33.98	34.89	37.67						
	45	η Virginis - - - -	C.	55.08	55.91	56.88	57.81	58.60	2 56.86	0.22	10.00	13 2 47.08	4.92	
	46		D.	16.11	18.88	19.71	20.75	21.63						
	47		E.	39.05	39.98	42.55	43.43	44.28						
	48	Polaris, S. P. - - -	B.	35.00	59.00	20.00	46.00	57.00	8 4.00	6.67	10.01	- - - -	- - -	
	49		D.	13.00	23.00	44.00	8.00	35.00						
	50		A.	33.68	34.55	35.45	38.29	39.38						
	51		B.	56.91	57.88	58.88	59.75	2.35						
	52	58 Virginis - - - -	C.	20.17	21.08	21.87	22.84	23.68	10 21.87	+ 0.23	—10.02	13 10 12.08	— 4.93	
	53		D	41.27	44.19	45.08	45.98	46.81						
	54		E.	4.46	5.45	8.21	9.03	9.93						

3. Stars unsteady.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m.	n.	c.
h.	s.	s.	s.	s	s.
Jan. 30, 6.4	— 9.59	— 0.011	+ 0.188	— 0.148	— 0.015
12.3	— 9.90	— 0.136	- -	- -	- -

Hosted by Google

DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	s.	s.	h. m. s.	s.	
	1		A.	15.75	16.62	17.58	20.28	21.20						
	2		B.	38.88	39.86	40.83	41.71	44.56						
Jan. 30	3	α Virginis	C.	2.08	3.14	4.06	4.95	5.83	18 3.96	+ 0.23	—10.03	13 17 54.16	— 4.90	Y.
	4		D.	23.48	26.42	27.30	28.12	28.89						
	5		E.	46.58	47.54	50.30	51.10	51.96						
	6		C.	5.69	6.87	7.93	8.93	9.98						
31	7	☼ +34° 40′	D.	31.49	34.79	35.70	36.78	37.79	42 35.26	—27.19	10.30	3 41 57.77	5.81	R.
	8		E.	59.09	0.24	3.50	4.59	5.61						
	9		A.	55.79	56.70	57.60	0.32	1.28						
	10		B.	19.22	20.21	21.11	22.13	24.68						
	11	γ^1 Eridani	C.	42.64	43.62	44.57	45.42	46.32	51 44.49	+ 0.22	10.30	3 51 34.41	4.43	
	12		D.	4.21	6.78	7.81	8.78	9.72						
	13		E.	27.63	28.57	31.40	32.35	33.29						
	14		B.	24.79	25.96	27.10	28.05	30.45						
	15	Weisse IV, 21	C.	48.00	49.22	50.09	51.03	51.86	2 49.96	0.13	10.30	4 2 39.80	5.05	
	16		D.	9.21	12.04	12.93	13.95	14.80						
	17		B.	17.65	18.80	19.88	20.81	23.57						
	18	B Z, 393, +20° 15′	C	41.80	42.95	43.92	44.80	45.82	7 43.99	0.10	10.30	4 7 33.79	5.49	
	19		D.	4.78	7.30	8.39	9.31	10.13						
	20		A.	52.29	53.20	54.18	57.08	58.12						
	21		B.	16.52	17.45	18.48	19.36	22.10						
	22	ε Tauri	C.	40.51	41.50	42.41	43.29	44.26	20 42.40	0.13	10.29	4 20 32.24	5.54	
	23		D.	2.67	5.66	6.51	7.47	8.37						
	24		E.	26.80	27.61	30.46	31.41	32.31						
	25		B.	42.34	43.30	44.35	45.31	47.89						
	26	B. A. C, 1402	C.	5.93	6.95	7.89	8.81	9.75	24 7.85	0.11	10.29	4 23 57.67	5.45	
	27		D.	27.60	30.42	31.43	32.38	33.37						
	28		A	19.73	20.60	21.55	24.21	25.28						
	29		B.	43.46	44.37	45.33	46.30	49.20						
	30	α Tauri	C.	7.27	8.26	9.22	10.20	11.08	28 9.05	0.14	10.29	4 27 58.89	5.50	
	31		D	29.07	31.72	32.68	33.67	34.66						
	32		E.	52.56	53.49	56.50	57.40	58.35						
	33		A.	12.95	13.96	14.89	18.25	19.37						
	34		B.	40.31	41 34	42.28	43.26	46.50						
	35	ι Aurigæ	C.	7.09	8.26	9.38	10.35	11.35	48 9.32	0.09	10.29	4 47 59.13	6.34	
	36		D	32.29	35.36	36.31	37.40	38.50						
	37		E.	59.42	0.50	3.73	4.58	5.50						
	38		A.	55.29	56.30	57.25	0.23	1.28						
	39		B.	20.15	21.20	22.15	23.18	25.95						
	40	ε Leporis	C.	44.78	45.70	46.69	47.66	48.64	59 46.72	+ 0.25	10.28	4 59 36.68	4.46	
	41		D.	7.45	10.65	11.66	12.58	13.47						
	42		E.	31.99	32.95	35.96	36.94	37.93						
	43		C	36.22	37.38	38.50	39.71	40.91						
	44	α Aurigæ	D.	6.17	10.32	11.45	12.71	13.86	7 10.84	—32.17	10.28	5 6 28.38	7.38	
	45		E.	38.84	40.45	41.18	45.39	46.49						
	46		B.	24.78	25.79	27.01	28.09	31.21						
	†47	B. Z., 513, +30° 34′	C	51.20	52.49	53.46	54.48	55.51	16 53.42	+ 0.06	10.28	5 16 43.19	6.42	
	48		D.	15.59	18.84	19.89	20.94	21.96						
	49		A.	19.25	20.24	21.23	23.56	24.53						
	50		B.	42.08	42.95	43.85	44.78	47.51						
	51	δ Orionis	C.	4.89	5.88	6.77	7.73	8.60	25 6.68	+ 0.18	—10.28	5 24 56.59	— 5.24	
	52		D.	25.67	28.51	29.41	30.40	31.33						
	53		E.	48.70	49.64	52.26	53.21	54.12						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
Jan. 31, 4.5	—10.29	+0.012	+0.167	—0.148	—0.015

47. Precedes another star about 3*s*.

Jan. 30. 7*h*. 10*m*. Image west, *r*. 0.05. Clp. west.
13 30 Image 0.00. Clp. west.

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m s.	s.	s.	h. m. s.	s.	
	1		C.	30.96	32.03	32.98	33.90	34.93						
Jan. 31	2	B. Z., 405, +25° 32′	D.	54.35	57.50	58.51	59.50	0.44	29 57.93	−24.75	−10.28	5 29 22.90	— 6.25	R.
	3		E.	19.58	20.56	23.61	24.55	25.56						
	4		A.	51.92	53.04	54.11	57.31	58.51						
	5		B.	19.50	20.67	21.69	22.73	26.21						
	6	α Columbæ	C.	47.14	48.23	49.23	50.32	51.31	34 49.21	+ 0.29	10.28	5 34 39.22	4.22	
	7		D.	12.38	15.65	16.71	17.81	18.83						
	8		E.	40.07	41.07	44.19	45.29	46.34						
	9		B.	44.52	45.68	46.75	47.79	51.50						
Feb 4	10	B. Z., 508, 101, +37° 0′	C.	13.13	14.37	15.40	16.39	17.46	23 15.36	+ 0.04	16.67	3 22 58.73	5.63	Y.
	11		D.	39.34	42.81	44.03	45.11	46.17						
	12	✡ (9.10) +37° 2′	E.	14.50	15.50	18.77	19.74	20.73	24 17.85	−56.06	16.67	3 23 5.11	5.65	
	13		B.	57.06	58.17	59.08	0.06	2.93						
	14	B. A. C., 1164	C.	22.06	22.98	23.88	24.79	25.70	39 23.89	+ 0.09	16.69	3 39 7.29	5.32	
	15		D.	44.82	47.78	48.75	49.75	50.61						
	16		A.	40.11	41.18	42.15	45.08	46.18						
	17		B.	5.05	6.11	7.06	7.91	10.98						
	18	η Tauri	C.	30.02	30.99	31.99	32.90	33.78	39 31.91	+ 0.12	16.69	3 39 15.34	5.32	
	19		D.	52.81	55.89	56.81	57.83	58.74						
	20		E.	17.79	18.72	21.62	22.58	23.41						
	21	B. Z., 402, 13, +34° 11′	D.	13.35	16.77	17.78	18.95	20.11	43 30.88	−40.57	16.70	3 42 33.60	5.74	
	22		E.	40.97	42.08	45.31	46.21	47.32						
	23		A.	2.04	2.94	3.88	6.67	7.53						
	24		B.	25.58	26.57	27.51	28.35	31.07						
	25	γ^1 Eridani	C.	49.08	50.04	50.90	51.83	52.71	51 50.86	+ 0.22	16.71	3 51 34.36	4.38	
	26		D.	10.69	13.50	14.32	15.15	16.13						
	27		E.	34.08	35.06	37.76	38.60	39.53						
	28		B.	34.41	35.38	36.30	37.22	39.95						
	29	B. A. C., 1366	C.	58.17	59.08	59.94	0.85	1.77	17 59.94	0.11	16.75	4 17 43.31	5.37	
	30		D.	19.79	22.70	23.67	24.53	25.42						
	31		B.	7.56	8.48	9.41	10.32	13.08						
	32	Lalande, 8431	C.	30.80	31.72	32.58	33.60	34.40	21 32.65	0.18	16.75	4 21 16.09	4.58	
	33		D.	52.22	55.06	55.93	56.87	57.79						
	34		B.	46.37	47.30	48.25	49.18	51.89						
	35	Rumker, 1235	C.	10.08	11.06	12.02	12.78	13.74	25 11.92	0.11	16.76	4 24 55.28	5.41	
	36		D.	31.78	34.70	35.61	36.55	37.45						
	37		B.	32.70	33.70	34.68	35.75	38.87						
	38	✡ (9) +29° 4′	C.	58.68	59.84	0.82	1.81	2.80	30 0.83	0.07	16.76	4 29 44.14	5.96	
	39		D.	22.83	26.00	26.98	27.97	28.98						
	40		B.	51.65	52.55	53.48	54.39	57.13						
	41	Weisse IV, 754	C.	14.43	15.46	16.28	17.18	18.06	35 16.28	0.15	16.77	4 34 59.66	5.05	
	42		D.	35.38	38.21	39.13	40.07	40.88						
	43	✡ (10) −1° 37′	C.	15.50	16.30	17.18	18.00	18.92	41 17.18	0.16	16.78	4 41 0.56	4.96	
	44		B.	29.82	30.65	31.58	32.43	35.19						
	45	x 1st Comet, '53, −1° 37′	C.	52.60	53.48	54.31	55.27	56.19	41 54.32	0.16	16.78	4 41 37.70	4.96	
	46		D.	13.53	16.32	17.28	18.16	18.95						
	47		B.	14.72	15.62	16.57	17.60	20.50						
	48	B. Z., 398, +29° 56′	C	40.71	41.72	42.70	43.73	44.84	48 42.87	+ 0.07	16.79	4 48 26.16	6.15	
	49		D.	5.19	8.36	9.35	10.32	11.18						
	50	✡ (9) +29° 54′	E.	44.15	45.20	48.35	49.40	50.41	49 47.50	−51.60	−16.79	4 48 39.12	— 6.15	

r.
Jan. 31. 5*h.* 50*m.* Image 0.03 west. Clamp west. Stars rather unsteady.—R.
Feb. 4. Azimuth cor. from δ Ursæ Minoris, S. P., and 51 (Hev.) Cephei.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s	s.	s.	s.	s.
Feb. 4, 5.2	−16.82	−0.082	+0.171	−0.144	−0.015

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	s.	s.	h. m. s.	s.	
	1		A.	1.67	2.70	3.62	6.61	7.72						
	2		B.	26.60	27.58	28.60	29.52	32.46						
Feb. 4	3	ε Leporis - - - - -	C.	51.27	52.36	53.27	54.16	55.09	59 53.18	+ 0.25	—16.80	4 59 36.62	— 4.40	Y.
	4		D.	13 94	17.04	17.95	18.87	19.81						
	5		E.	38.57	39.60	42.59	43.49	44.36						
	6		B.	36.94	38.03	39.04	40.02	43.02						
	7	B. Z., 396, 4, +26° 15′	C.	2.40	3.39	4.40	5.32	6.34	4 4.40	0.08	16.81	5 3 47.67	6.09	
	8		D.	25.80	28.86	29.89	30.87	31.71						
	9		A.	22.25	23.08	24.04	26.69	27.75						
	10		B.	45.48	46.32	47.21	48.12	50.97						
	11	β Orionis - - - - -	C.	8.43	9.36	10.20	11.19	11.95	8 10.19	0.21	16.81	5 7 53.58	4.88	
	12		D.	29.55	32.38	33.33	34.19	35.04						
	13		E.	52.64	53.59	56.14	56.98	57.88						
	14		B.	15.85	16.78	17.72	18.78	21.81						
	15	B. Z., 405, 15, +26° 27′	C.	41.27	42.23	43.24	44.19	45.17	22 43.23	0.08	16.83	5 22 26.47	6.22	
	16		D.	4.71	7.71	8.66	9.60	10.69						
	17		A.	40.94	41.93	42.79	45.42	46.51						
	18		B.	3.97	4.80	5.73	6.56	9.63						
	19	ε Orionis - - - - -	C.	26.71	27.58	28.49	29.48	30.20	29 28.48	0.19	16.84	5 29 11.82	5.19	
	20		D.	47.63	50.43	51.40	52.22	53.07						
	21		E.	10.48	11.39	14.03	14.86	15.73						
	22		B.	26.04	27.06	28.11	29.20	32.61						
	23	α Columbæ - - - -	C.	53.51	54.60	55.59	56.71	57.74	34 55.79	0.25	16.86	5 34 39.18	4.16	
	24		D.	18.66	22.28	23.17	24.21	25.32						
	25		B.	51.70	52.70	53.68	54.65	57.61						
	26	B. Z., 405, +26° 26′ -	C.	17.09	18.10	19.08	20.11	21.12	47 19.10	0.12	16.87	5 47 2.35	6.37	
	27		D.	40.54	43.56	44.53	45.57	46.48						
	28		B.	39.90	41.04	42.09	43.04	46.07						
	29	☼ +26° 26′ - - -	C.	5.53	6.43	7.43	8.41	9.35	54 7.46	0.08	16.88	5 53 50.66	6.40	
	30		D.	28.94	31.93	32.90	33.93	34.85						
	31		A.	8.15	9.20	9.98	12.80	13.88						
	32		B.	31.95	32.81	33.71	34.69	37.43						
	33	ν Orionis - - - - -	C.	55.39	56.43	57.30	58.21	59.14	59 57.28	+ 0.15	16.89	5 59 40.54	— 5.90	
	34		D.	17.19	20.08	20.91	21.82	22.77						
	35		E.	40.61	41.65	44.50	45.30	46.15						
	36		B.	53.00	38.00	22.00	7.00	23.00						
	37	δ Ursæ Minoris, S. P -	C.	29.00	14.00	59.00	43.00	29.00	17 5.08	— 3.50	16.91	18 16 44.67	+ 45.11	
	38		D.	36.00	49.00	34.50	- -	- -						
	39	51 (Hev.) Cephei - - -	C.	28.00	47.00	4.00	24.00	41.00	35 4.80	— 3.18	16.93	6 34 44.68	— 66.84	
	40		B.	28.58	29.43	30.50	31.45	34.58						
6	41	B. Z., 396, 4, +26° 15′	C.	53.81	54.89	55.81	56.81	57.82	3 55.88	0.00	8.24	5 3 47.63	6.08	
	42		D.	17.22	20.35	21.30	22.32	23.29						
	43		A.	13.70	14.70	15.52	18.14	19.31						
	44		B.	36.79	37.80	38.77	39.67	42.41						
	45	β Orionis - - - - -	C.	59.96	0.89	1.72	2.68	3.63	8 1.71	+ 0.04	8.24	5 7 53.50	4.86	
	46		D.	21.21	23.87	24.82	25.69	26.57						
	47		E.	44.10	44.97	47.69	48.61	49.50						
	48		A.	47.08	48.13	49.10	52.12	53.20						
	49		B.	13.17	14.13	15.14	16.14	19.19						
	50	β Tauri - - - - -	C.	39.00	40.07	40.97	42.07	43.05	17 41.01	+ 0.04	— 8.24	5 17 32.81	— 6.28	
	51		D.	2.81	5.98	7.11	8.05	8.96						
	52		E.	28.70	29.75	32.77	33.77	34.80						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
Feb. 4, 5.2	— 16.82	— 0.082	+ 0.171	— 0.144	— 0.015

r.

Feb. 4. 6*h*. 45*m*. { Image west 0.03. Clp. west. Image west 0.14. Clp. east.

Feb. 5. Lengthened pendulum of clock two divisions.

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	s.	s.	h. m. s.	s.	
	1		B.	41.59	42.55	43.41	44.42	47.44						
Feb. 6	2	B. A. C., 1742	C.	6.40	7.50	8.40	9.34	10.27	27 8.40	0.00	— 8.23	5 27 0.17	— 6.13	Y.
	3		D.	29.34	32.31	33.37	34.39	35.28						
	4		C.	18.20	19.18	20.04	20.89	21.72						
	5	ε Orionis	D.	39.71	41.85	42.86	43.71	44.53	29 42.46	—22.40	8.23	5 29 11.82	5.18	
	6		E.	1.90	2.85	5.58	6.63	7.23						
	7		A.	49.82	50.90	51.89	55.21	56.40						
	8		B.	17.56	18.60	19.67	20.70	24.13						
	9	α Columbæ	C.	45.05	46.10	47.15	48.22	49.23	34 47.13	+ 0.04	8.23	5 34 38.95	4.14	
	10		D	10.39	13.71	14.74	15.74	16.82						
	11		E.	37.86	38.85	42.21	43.20	44.17						
	12		B.	47.90	48.81	49.73	50.72	53.61						
	13	B. Z., 524,72, +21° 57′	C.	12.28	13.39	14.30	15.28	16.21	49 14.30	0.00	8.22	5 49 6.09	6.15	
	14		D.	34.90	37.94	38.89	39.81	40.78						
	15		B.	32.00	32.95	34.00	35.04	38.02						
	16	Rumker, 1673	C	57.41	58.45	59.40	0.30	1.31	54 59.42	0.00	8.21	5 54 51.21	6.39	
	17		D.	20.78	23.88	24.95	25.89	26.87						
	18	Rumker, 1680	E.	10.83	11.73	14.80	15.78	16.67	56 13.96	—49.98	8.21	5 55 15.77	6.40	
	19		B.	13.40	14.38	15.39	16.32	19.30						
	20	G. C., 535	C.	38.04	39.08	39.90	40.85	41.84	6 39.98	0.00	8.21	6 6 31.78	6.26	
	21		D.	0.66	3.76	4.65	5.63	6.57						
	22		B.	57.64	58.68	59.61	0.58	3.42						
	23	✡ +21° 11′	C.	22.17	23.17	24.07	24.93	25.95	12 24.08	0.00	8.20	6 12 15.87	6.23	
	24		D.	44.73	47.67	48.53	49.53	50.48						
	25	B. A. C., 2038	C.	4.51	5.53	6.45	7.40	8.29	13 6.44	0.00	8.20	6 12 58.23	6.23	
	26	B. A. C., 2039	C.	11.80	12.84	13.76	14.70	15.70	13 13.76	0.00	8.20	6 13 5.55	— 6.23	
	27	δ Ursæ Minoris, S. P.	C.	24.00	7.50	53.00	38.00	22.50	16 53.00	+ 0.41	8.20	18 16 45.21	+ 44.73	
	28	✡(8.9) —14° 42′	D.	38.37	41.21	42.12	43.12	43.89	26 41.74	—23.17	8.20	6 26 10.37	— 4.98	
	29	Weisse, 809	C.	8.08	9.05	9.95	10.81	11.73	27 21.55	11.58	8.20	6 27 1.77	4.99	
	30		D.	29.91	32.63	33.61	34.42	35.33						
	31		B.	21.42	22.42	23.37	24.35	27.29						
	32	B. Z., 348,101	C.	46.25	47.32	48.35	49.30	50.21	31 48.30	0.00	8.19	6 31 40.10	6.43	
	33		D.	9.28	12.31	13.18	14.21	15.20						
	34	51 (Hev.) Cephei	C.	16.00	35.00	53.00	12.00	30.00	34 53.20	— 0.46	8.19	6 34 44.55	66.49	
	35		B.	15.83	16.75	17.69	18.62	21.35						
	36	B. A. C., 2221	C.	39.31	40.32	41.14	42.09	42.95	40 41.18	+ 0.01	8.19	6 40 32.99	5.05	
	37		D.	1.00	3.74	4.62	5.62	6.62						
	38		B.	12.56	13.51	14.49	15.39	18.21						
	39	Weisse, 135	C.	36.28	37.19	38.10	38.92	39.78	44 38.02	+ 0.01	8.19	6 44 29.84	5.05	
	40		D.	57.79	0.61	1.55	2.49	3.39						
	41		B.	14.14	16.04	18.06	19.70	25.26						
	42	Arg. Z., 93, 90	C.	1.00	3.06	4.53	6.42	8.19	51 4.61	— 0.02	8.18	6 50 56.40	10.15	
	43		D.	43.78	49.56	51.43	53.08	55.06						
	44	ε Canis Majoris	D.	42.30	45.41	46.40	47.40	48.40	54 58.73	38.34	8.18	6 54 12.21	4.64	
	45		E.	8.25	9.28	12.30	13.31	14.28						
	46	B. A. C., 2312	C.	18.94	20.78	22.65	24.51	26.16	57 45.81	23.14	8.18	6 57 14.48	10.23	
	47		D.	2.32	7.94	9.88	11.55	13.36						
	48	Rumker, 2086	E.	56.11	58.03	3.46	5.08	6.87	59 1.91	—92.26	8.18	6 57 21.47	10.21	
	49		A.	8.85	9.81	10.85	13.79	14.84						
	50		B.	33.57	34.51	35.51	36.40	39.40						
	51	δ Geminorum	C.	58.31	59.17	0.10	1.11	2.04	12 0.10	+ 0.04	— 8.17	7 11 51.96	— 6.48	
	52		D.	20.85	23.82	24.75	25.71	26.62						
	53		E.	45.41	46.30	49.29	50.20	51.18						

Feb. 6. Azimuth correction from δ Ursæ Minoris, S. P., and 51 (Hev.) Cephei.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m.	n.	c.
h.	s.	s.	s.	s.	s.
Feb. 6, 6.2	— 8.20	+ 0.035	+ 0.021	— 0.006	— 0.015

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	s.	s.	h. m. s.	s.	
Feb. 6	1	☼ (8. 9) —14° 27′	B.	31. 30	32. 20	33. 20	34. 07	36. 73	17 45. 01	+11. 58	— 8. 17	7 17 48. 43	— 5. 17	Y.
	2		C.	54. 46	55. 61	56. 58	57. 49	58. 49						
	3	α^1 Geminorum	B.	25. 51	26. 52	27. 59	28. 63	31. 82	25 54. 83	0. 06	8. 16	7 25 46. 72	7. 02	
	4		D.	17. 15	20. 29	21. 28	22. 32	23. 37						
	5		A.	58. 74	59. 82	0. 92	4. 18	5. 29						
	6	α^2 Geminorum	C.	52. 81	53. 87	54. 83	56. 00	56. 90	25 54. 45	0. 00	8. 16	7 25 46. 29	7. 02	
	7		E.	44. 50	45. 59	48. 62	49. 69	50. 64						
	8		B.	8. 26	9. 21	10. 20	11. 07	14. 01						
12	9	B. A. C., 1350	C.	32 18	33. 11	33. 99	34. 87	35. 82	15 33. 94	+ 0. 11	5. 59	4 15 28. 46	5. 27	R.
	10		D.	53. 88	56. 73	57. 66	58. 61	59. 57						
	11		C.	35. 50	36. 54	37. 48	38. 42	39. 48						
	12	ϵ Tauri	D.	57. 82	0. 73	1. 69	2. 61	3. 57	21 1. 20	—23. 57	5. 58	4 20 32. 04	5. 38	
	13		E.	21. 73	22. 67	25. 59	26. 59	27. 53						
	14		B.	34. 46	35. 61	36. 54	37. 69	40. 85						
	15	B. A. C., 1404	C.	1. 04	2. 43	3. 32	4. 31	5. 32	25 3. 15	+ 0. 18	5. 58	4 24 57. 75	3. 78	
	16		D.	25. 58	28. 51	29. 53	30. 52	31. 53						
	17		B.	38. 61	39. 59	40. 57	41. 41	44. 21						
	18	α Tauri	C.	2. 24	3. 27	4. 23	5. 17	6. 15	28 4. 23	0. 11	5. 58	4 27 58. 76	5. 34	
	19		D.	24. 16	26. 94	28. 06	28. 97	29. 91						
	20		B.	2. 80	3. 63	4. 59	5. 52	8. 41						
	21	B. A. C., 1451	C.	26. 86	27. 87	28. 80	29. 75	30. 73	34 28. 83	0. 16	5. 57	4 34 23. 43	4. 26	
	22		D.	49. 15	52. 08	53. 15	54. 13	55. 05						
	23		A.	7. 88	8. 87	9. 91	13. 28	14. 29						
	24		B.	35. 17	36. 15	37. 22	38. 20	41. 70						
	25	ι Aurigæ	C.	2. 37	3. 39	4. 31	5. 38	6. 40	48 4. 34	+ 0. 11	5. 55	4 47 58. 90	6. 17	
	26		D.	27. 29	30. 49	31. 53	32. 52	33. 52						
	27		E.	54. 45	55. 48	58. 59	59. 58	0. 60						
	28		C.	10. 55	11. 85	13. 37	14. 54	15. 60						
	29	☼ +45° 35′	D.	40. 69	44. 55	45. 92	47. 23	48. 41	54 45. 28	—31. 97	5. 55	4 54 7. 76	7. 01	
	30		E.	13. 03	14. 58	18. 40	19. 65	20. 85						
	31		A.	50. 49	51. 44	52. 41	55. 11	56. 45						
	32		B.	15. 28	16. 22	17. 24	18. 20	21. 07						
	33	ϵ Leporis	C.	39. 90	40. 98	41. 95	42. 88	43. 87	59 41. 84	+ 0 20	5. 54	4 59 36. 50	4. 28	
	34		D.	2. 75	5. 58	6. 51	7. 51	8. 48						
	35		E.	27. 30	28. 24	31. 03	32. 05	33. 07						
	36		B.	30. 08	31. 03	31. 93	32. 84	35. 50						
	37	B. A. C., 1661	C.	52. 64	53. 77	54. 66	55. 55	56. 57	14 54. 68	+ 0. 13	5. 53	5 14 49. 29	5. 11	
	38		D.	13. 90	16. 50	17. 53	18. 47	19. 31						
	39		C.	36. 04	37. 08	38. 08	39. 08	40. 11						
	40	β Tauri	D.	59. 88	2. 93	4. 15	5. 11	6. 16	18 3. 64	—25. 41	5. 52	5 17 32. 71	6. 19	
	41		E.	26. 07	27. 05	30. 00	30. 94	31. 91						
	42		A.	14. 32	15. 30	16. 25	18. 65	19. 73						
	43		B.	37. 08	38. 10	39. 04	39. 93	42. 50						
	44	δ Orionis	C.	0. 04	1. 07	1. 92	2. 88	3. 82	25 1. 78	+ 0. 16	5. 52	5 24 56. 43	5. 11	
	45		D.	20. 98	23. 75	24. 60	25. 50	26. 45						
	46		E	43. 61	44. 60	47. 22	48. 12	49. 07						
	47		A.	47. 00	48. 12	49. 07	52. 18	53. 40						
	48		B.	14. 58	15. 61	16. 72	17. 75	21. 11						
	49	α Columbæ	C.	42. 30	43. 38	44. 40	45. 39	46. 42	34 44. 24	+ 0. 22	— 5. 51	5 34 38. 96	— 4. 02	
	50		D.	7. 50	10. 70	11. 82	12. 81	13. 88						
	51		E.	35. 00	36. 11	39. 25	40. 28	41. 24						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h. Feb, 12, 4. 9	s. — 5. 55	s. + 0. 064	s. + 0. 149	s. — 0. 088	s. — 0. 015

r.
Feb. 6. 7*h.* 35*m.* Image 0. 00. Clp. west.

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Date.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
	1		B.	45.00	29.00	13.00	59.00	13.00						
Feb. 12	2	δ Ursæ Minoris, S. P.	C.	22.00	6.00	52.00	36.00	22.00	16 50.47	+ 1.88	— 5.46	6 16 46.89	+ 43.22	R.
	3		D.	28.00	41.00	25.00	10.00	56.00						
	4	51 (Hev.) Cephei	C.	14.00	34.00	50.00	9.00	26.00	34 50.60	— 2.04	5.44	6 34 43.12	— 64.90	
	5		A.	27.53	28.42	29.43	32.04	32.99						
	6		B.	50.40	51.33	52.25	53.13	55.82						
13	7	ε Orionis	C.	13.27	14.19	15.05	15.91	16.77	29 15.08	+ 0.30	3.70	5 29 11.68	5.08	Y.
	8		D.	34.19	37.07	37.97	38.77	39.59						
	9		E.	56.95	57.86	0.51	2.30	3.21						
	10		A.	44.70	45.78	46.80	49.90	51.16						
	11		B.	12.41	13.50	14.45	15.45	18.98						
	12	α Columbæ	C.	39.90	41.05	41.97	43.11	44.12	34 42.10	0.42	3.67	5 34 38.84	3.99	
	13		D.	5.33	8.57	9.72	10.77	11.84						
	14		E.	32.71	33.72	37.15	38.13	39.17						
	15		B.	13.62	14.60	15.55	16.56	19.64						
	16	B. A. C., 1863	C.	39.24	40.36	41.30	42.23	43.13	44 41.29	+ 0.16	3.64	5 44 37.81	6.30	
	17		D.	3.05	5.96	7.07	8.02	8.96						
	18	G. C., 516	D.	44.70	48.07	49.28	50.35	51.40	51 2.81	— 42.07	3.61	5 50 17.13	6.89	
	19		E.	13.50	14.41	17.70	18.78	19.92						
	20		B.	25.40	26.49	27.55	28.66	31.97						
	21	B. Z., 518, 90, +34° 22′	C.	53.10	54.13	55.17	56.26	57.35	54 55.21	+ 0.13	3.58	5 54 51.76	6.74	
	22		D.	18.48	21.75	22.92	24.00	24.90						
	23	Lalande, 11513	D.	32.19	35.65	36.67	37.79	38.95	58 50.08	— 41.56	3.57	5 58 4.95	6.91	
	24		E.	0.52	1.59	4.82	5.78	6.89						
	25	✡ (8.9) +40 °59′	B.	4.00	5.20	6.26	7.32	11.00	6 21.56	+ 14.95	3.53	6 6 32.98	7.27	
	26		C.	34.07	35.37	36.40	37.45	38.56						
	27		B.	5.11	6.34	7.38	8.68	12.27						
	28	B. Z, 522, 159, +40° 56′	C.	35.34	36.50	37.60	38.73	39.98	7 37.65	0.10	3.53	6 7 34.22	— 7.27	
	29		D.	3.10	6.70	7.84	9.04	10.13						
	30		B.	41.50	26.50	12.00	56.00	10.50						
	31	δ Ursæ Minoris, S.P.	C.	18.00	2.00	48.00	32.00	17.00	16 47.17	3.57	3.49	18 16 47.26	+ 42.73	
	32		D.	24.00	39.00	22.50	6.50	52.00						
	33	51 (Hev.) Cephei	B.	17.00	35.00	55.00	14.00	10.00	27 2.20	7 43.93	3.41	6 34 42.72	— 64.56	
	34		B.	34.72	35.85	36.91	37.87	41.04						
	35	B. A. C., 2197	C.	0.84	1.91	2.90	3.94	4.83	36 2.91	0.16	3.40	6 35 59.67	6.66	
	36		D.	24.90	28.01	28.92	30.00	31.06						
	37		B.	2.19	3.27	4.45	5.49	9.04						
	38	B. A. C., 2235	C.	31.40	32.64	33.77	34.88	36.04	43 33.78	+ 0.11	3.37	6 43 30.53	7.33	
	39		D.	58.50	2.09	3.30	4.31	5.40						
	40		C.	32.34	33.52	34.81	36.20	37.46						
	41	B. A. C., 2261	D.	2.21	6.05	7.26	8.59	9.72	48 6.71	— 31.76	3.34	6 47 31.61	7.85	
	42		E.	34.53	35.82	39.53	40.70	41.92						
	43		A.	44.34	45.38	46.21	48.83	49.94						
	44		B.	8.11	9.00	10.01	10.88	13.71						
	45	γ Canis Majoris	C.	31.69	32.69	33.53	34.37	35.34	57 33.51	+ 0.34	3.31	6 57 30.54	5.00	
	46		D.	53.42	56.28	57.18	58.11	58.93						
	47		E.	17.05	17.88	20.85	21.61	22.48						
	48		C.	44.42	45.39	46.39	47.23	48.18						
	†49	✡ +22° 28′	D.	7.22	10.05	10.98	11.89	12.71	4 10.55	— 24.06	— 3.28	7 3 43.21	— 6.41	
	50		E.	31.67	32.56	35.56	36.51	37.43						

49. Close double; observed first.
Feb. 13. Azimuth cor. from δ Ursæ Minoris, S. P., and 51 (Hev.) Cephei.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m.	n.	c.
h.	s.	s.	s.	s.	s.
Feb. 13, 6.8	— 3.36	+ 0.266	+ 0.276	— 0.181	— 0.015

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	s.	s.	h. m. s.	s.	
	1		A.	3.66	4.70	5.51	8.60	9.70						
	2		B.	28.31	29.41	30.40	31.28	34.34						
Feb. 13	3	δ Geminorum - - -	C.	53.10	54.07	55.05	56.08	56.99	11 54.97	+ 0.22	— 3.24	7 11 51.95	— 6.42	Y.
	4		D.	15.90	18.77	19.54	20.52	21.49						
	5		E.	40.32	41.19	44.23	45.03	46.04						
	6		B.	28.64	29.55	30.42	31.38	34.18						
	7	Weisse, 551 - - -	C.	51.92	52.89	53.73	54.69	55.49	18 53.75	0.23	3.21	7 18 50.77	5.96	
	8		D.	13.45	16.19	17.03	17.91	18.81						
	9		A.	53.78	54.78	55.82	59.10	0.19						
	10		B.	20.67	21.80	22.81	23.85	27.36						
	11	α^2 Geminorum - - -	C.	47.50	48.72	49.80	50.73	51.76	25 49.71	+ 0.18	3.17	7 25 46.71	6.98	
	12		D.	12.67	15.65	16.75	17.70	18.59						
	13		E.	39.10	40.20	43.51	44.41	45.42						
	14		B.	11.00	29.50	49.50	6.50	2.00						
15	15	51 (Hev.) Cephei - - -	C.	6.00	25.00	41.50	3.00	20.00	34 43.77	- -	- -	- - - -	- - -	
	16		D.	23.00	22.00	40.00	59.00	18.00						
	17		A.	17.95	18.92	19.95	22.93	24.05						
	18		B.	44.03	45.05	46.00	47.09	50.36						
	19	ε Canis Majoris - - -	C.	10.09	11.11	12.03	12.97	14.04	53 12.04	0.21	0.24	6 53 12.02	4.51	
	20		D.	34.10	37.13	38.12	39.10	40.10						
	21		E.	59.82	1.00	4.10	4.94	5.95						
	22		B.	32.32	33.45	34.40	35.30	38.19						
	23	B. A. C., 2313 - - -	C.	57.06	58.05	58.91	59.99	0.86	56 59.00	0.13	0.23	6 56 58.90	6.38	
	24		D.	19.73	22.75	23.71	24.67	25.64						
	25		B.	56.91	58.25	59.78	1.05	5.48						
	26	B. A. C., 2341 - - -	C.	33.85	35.16	36.60	38.05	39.39	2 36.53	0.08	0.23	7 2 36.38	8.57	
	27		D.	7.57	11.73	13.31	14.63	16.10						
	28		B.	47.76	49.17	50.74	52.21	56.34						
	29	B. A. C., 2459 - - -	C.	23.36	24.60	25.99	27.41	28.80	19 26.05	0.09	0.22	7 19 25.92	8.42	
	30		D.	55.86	0.05	1.43	2.82	4.29						
	31		B.	17.61	18.66	19.79	20.80	24.06						
	32	α^2 Geminorum - - -	C.	44.64	45.77	46.71	47.76	48.78	25 46.72	0.12	0.22	7 25 46.62	6.96	
	33		D.	9.46	12.55	13.67	14.77	15.79						
	34		B.	41.70	42.55	43.53	44.50	47.42						
	35	B. A. C., 2544 - - -	C.	6.19	7.22	8.18	9.15	10.05	34 56.05	+12.29	0.21	7 35 8.12	6.48	
	36		C.	49.28	50.35	51.44	52.41	53.39						
	37	β Geminorum - - -	D.	13.16	16.36	17.40	18.42	19.45	37 16.88	—25.33	0.21	7 36 51.34	6.72	
	38		E.	39.07	40.09	43.14	44.14	45.18						
	39	B. A. C., 2677 - - -	C.	18.50	25.81	33.13	40.78	47.11	57 33.07	0.36	0.20	7 57 32.51	28.30	
	40		C.	52.56	53.53	54.50	55.35	56.33						
	41	B. Z., 278, +21° 01′ -	D.	15.07	17.88	18.80	19.71	20.57	15 18.42	—23.87	0.19	8 14 54.36	6.46	
	42		E.	39.40	40.44	43.13	44.12	44.95						
	43		B.	59.51	0.43	1.58	2.48	5.45						
	44	B. A. C., 2818[1] - -	D.	47.79	50.86	51.78	52.73	53.75	18 26.64	+ 0.13	0.19	8 18 26.57	6.65	
	45	B. A. C., 2818[2] - -	C.	24.95	25.88	26.81	27.84	28.81	18 26.86	0.13	0.19	8 18 26.79	6.65	
	46		A.	52.20	53.18	54.19	57.09	58.00						
	47		B.	16.71	17.65	18.56	19.55	22.45						
	48	η Cancri - - - - -	C.	41.12	42.15	42.99	43.92	44.84	24 42.97	+ 0.17	0.19	8 24 42.94	6.47	
	49		D.	3.49	6.51	7.48	8.43	9.31						
	50		E.	27.84	28.81	31.62	32.56	33.52						
	†51	Groombridge, 1452 -	C.	30.12	36.00	41.60	46.95	52.48	30 41.43	— 0.23	— 0.19	8 30 41.02	— 22.11	

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
Feb. 13, 6.8	— 3.36	+ 0.266	+ 0.276	— 0.181	— 0.015
15, 7.8	— 0.21	+ 0.031	+ 0.169	— 0.049	— 0.015

51. Dim. *r.*
Feb. 13. 7*h.* 40*m.* Image west 0.11. Clp. west.
15. Azimuth cor. from 51 (Hev.) Cephei and ε Canis Majoris.

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	s.	s.	h. m. s.	s.	
	1		A.	39.75	40.67	41.61	44.33	45.20						
	2		B.	2.82	3.80	4.61	5.50	8.18						
Feb. 15	3	ε Hydræ - - - - -	C.	25.76	26.70	27.59	28.56	29.38	39 27.54	+ 0.18	— 0.18	8 39 27.53	— 5.94	Y.
	4		D.	46.88	49.71	50.61	51.40	52.25						
	5		E.	9.76	10.66	13.35	14.21	15.10						
	6		B.	55.13	56.15	56.96	57.82	0.57						
	†7	Anon — 13° 8′ - -	C.	18.50	19.49	20.38	21.20	22.03	46 20.33	+ 0.16	— 0.18	8 46 20.31	5.40	
	8		D.	39.97	42.88	43.74	44.60	45.49						
	9		C.	5.75	6.84	7.82	8.74	9.81						
20	†10	Rumker, 2553 - - -	D.	30.05	33.19	34.21	35.26	36.16	2 33.72	—25.85	+ 7.17	5 2 15.03	6.01	
	11		E.	56.34	57.30	0.40	1.50	2.45						
	12		B.	37.64	38.60	39.62	40.52	43.60						
	13	B. Z, 405, 6 + 26° 6′ -	C.	2.88	3.95	4.88	5.92	6.90	11 4.95	+ 0.04	7.18	5 11 12.18	5.90	
	14		D.	26.32	29.36	30.48	31.38	32.24						
	15		A.	31.32	32.37	33.42	36.55	37.62						
	16		B.	57.48	58.49	59.48	0.41	3.61						
	17	β Tauri - - - - -	C.	23.40	24.40	25.32	26.40	27.35	17 25.36	0.08	7.19	5 17 32.63	6.06	
	18		D.	47.22	50.39	51.35	52.39	53.34						
	19		E.	13.10	14.15	17.17	18.07	19.06						
	20		B.	24 48	25.40	26.30	27.20	29.87						
	21	δ Orionis - - - - -	C.	47.23	48.16	48.99	49.90	50.71	24 49.03	0.05	7.20	5 24 56.29	4.99	
	22		D	8.15	10.97	11.87	12.69	13.54						
	23		A.	16.85	17.79	18.74	21.41	22.36						
	24		B.	39.84	40.68	41.57	42.41	45.17						
	25	ε Orionis - - - - -	C.	2.50	3.51	4.38	5.30	6.10	29 4.34	+ 0.08	7.21	5 29 11.63	4.98	
	26		D.	23.59	26.30	27.17	28.07	28.90						
	27		E.	46.22	47.22	49.90	50.73	51.61						
	28	χ^1 Orionis - - - - -	E.	48.80	49.73	52.58	53.48	54.40	46 51.80	—47.74	7.24	5 46 11.30	5.86	
	29		A.	43.58	44.60	45.60	48.56	49.63						
	30		B.	8.54	9.51	10.52	11.50	14.48						
	31	1 Geminorum - - -	C.	33.31	34.34	35.31	36.30	37.26	55 35.29	+ 0.08	7.26	5 55 42.63	6.06	
	32		D.	56.21	59.18	0.17	1.19	2.09						
	33		E.	21.00	21.87	24.88	25.82	26.71						
	34		B.	35.00	19.50	4.50	49.00	3.50						
	35	δ Ursæ Minoris, S. P. -	D.	17.50	31.50	17.00	1.00	47.00	16 41.55	- -	- -	- - - - -	- - -	
	36		A.	46.48	47.51	48.41	51.18	52.23						
	37		B.	10.38	11.32	12.21	13.14	15.99						
	38	γ Geminorum - - -	C.	34.12	35.10	35.98	36.92	37.82	29 35.97	0.08	7.32	6 29 43.37	5.95	
	39		D.	55.99	58.83	59.83	0.72	1.59						
	40		E.	19.69	20.63	23.50	24.37	25.23						
	41		A.	33.02	33.94	34.90	37.94	39.07						
	42		B.	58.79	59.78	0.72	1.69	4.79						
	43	Moon's 1st Limb - -	C.	24.42	25.41	26.33	27.30	28.27	34 26.33	+ 0.08	7.33	6 34 33.73	- - -	
	44		D.	48.03	51.01	52.02	52.95	53.95						
	45		E.	13.60	14.51	17.61	18.59	19.50						
	46	ε Geminorum - - -	E.	4.31	5.32	8.28	9.21	10.20	36 7.46	—49.48	7.33	6 35 25.31	6.37	
	47		A.	33.79	34.78	35.70	38.50	39.60						
	48		B.	57.56	58.52	59.51	0.40	3.23						
	49	γ Canis Majoris - - -	C.	21.16	22.15	23.04	23.92	24.95	57 23.00	+ 0.09	+ 7.36	6 57 30.45	— 4.93	
	50		D.	42.92	45.80	46.69	47.63	48.54						
	51		E.	6.60	7.53	10.21	11.12	12.08						

7. Preceded by a ✱ (9. 10) a little to Sd.
10. North, following.

Feb. 15. 9h. Image west 0.11 r. Clp. west.
20. Azimuth cor. from δ Ursæ Minoris, S. P., and γ Canis Majoris.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m.	n.	c.
h.	s.	s.	s.	s.	s.
Feb. 20, 6.3	+ 7.30	+ 0.103	+ 0.069	— 0.014	— 0.015

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s	s	m. s.	s.	s.	h. m. s.	s.	
	1		A.	53.21	54.19	55.13	58.04	59.08						
Feb. 20	†2	δ Geminorum - - -	B.	17.95	18.86	19.84	20.87	23.80	11 20.23	+24.31	+ 7.39	7 11 51.92	— 6.37	Y.
	3		C.	42.50	43.61	44.50	45.49	46.33						
	4		B.	19.90	20.85	21.77	22.61	25.32						
21	5	β Orionis - - - - - -	C.	42.95	43.89	44.70	45.66	46.52	7 44.75	0.14	8.50	5 7 53.38	4.63	R.
	6		D.	4.11	6.83	7.80	8.73	9.62						
	7		B.	5.68	6.62	7.70	8.67	11.80						
	8	B. Z., 513, +30° 33′ -	C.	32.00	33.09	34.09	35.10	36.18	16 34.18	0.03	8.51	5 16 42.73	6.14	
	9		D.	56.41	59.85	0.87	1.88	2.84						
	10		B.	4.50	5.42	6.32	7.20	9.86						
	11	B. A. C., 1708 - - -	C.	27.58	28.59	29.50	30.49	31.31	20 29.52	0.15	8.52	5 20 38.19	4.62	
	12		D.	49.10	51.80	52.80	53.73	54.68						
	13		A.	0.03	1.03	2.05	4.52	5.59						
	14		B.	23.07	23.95	24.89	25.78	28.47						
	15	δ Orionis - - - - - -	C.	45.89	46.83	47.69	48.55	49.41	24 47.61	0.15	8.53	5 24 56.29	4.98	
	16		D.	6.55	9.62	10.51	11.41	12.26						
	17		E.	29.59	30.58	33.09	34.00	34.91						
	18		B.	43.99	45.00	45.95	46.95	50.00						
	19	B. Z., 405, +26° 31′ -	C.	9.44	10.42	11.30	12.30	13.30	30 11.38	0.04	8.54	5 30 19.97	6.04	
	20		D.	32.74	35.70	36.80	37.91	38.96						
	21		A.	32.78	33.88	34.86	38.09	39.41						
	22		B.	0.32	1.35	2.40	3.52	6.89						
	23	α Columbæ - - - - -	C.	27.79	28.90	29.92	31.04	32.10	34 30.00	0.24	8.55	5 34 38.80	3.84	
	24		D.	53.22	56.63	57.59	58.58	59.61						
	25		E.	20.78	21.83	25.10	26.18	27.20						
	26		B.	54.50	55.47	56.41	57.35	59.82						
	27	*(9) +9° 49′ - - -	C.	17.61	18.61	19.55	20.50	21.41	41 19.45	0.09	8.57	5 41 28.10	5.43	
	28		D.	38.90	41.44	42.42	43.34	44.37						
	29		B.	51.69	52.68	53.61	54.50	57.27						
	30	B. A. C., 1851 - - -	C.	14.71	15.78	16.69	17.62	18.51	42 16.66	+ 0.09	8.57	5 42 25.32	5.44	
	31		D.	36.16	38.71	39.65	40.71	41.65						
	32		C.	30.58	31.47	32.41	33.30	34.18						
	33	α Orionis - - - - - -	D.	51.59	54.37	55.29	56.23	57.19	47 54.88	—22.49	8.58	5 47 40.96	5.37	
	34		E.	14.52	15.46	18.15	19.00	19.94						
	35		B.	41.22	42.19	43.20	44.15	46.89						
	36	B. A. C., 1934 - - -	C.	5.31	6.34	7.30	8.29	9.22	55 7.39	+ 0.06	8.59	5 55 16.05	5.91	
	37		D.	27.57	30.60	31.63	32.51	33.50						
	38		A.	42.52	43.61	44.50	47.28	48.24						
	39		B.	6.43	7.35	8.28	9.25	12.00						
	40	ν Orionis - - - - - -	C.	29.99	30.85	31.73	32.59	33.59	59 31.73	0.11	8.60	5 59 40.44	5.70	
	41		D.	51.52	54.52	55.41	56.30	57.19						
	42		E.	15.20	16.07	18.65	19.60	20.50						
	43		B.	33.00	17.00	1.00	45.00	2.00						
	44	δ Ursæ Minoris, S P. -	C.	9.00	53.00	39.00	23.00	9.00	16 38.27	- -	- -	- - - -	- - -	
	45		D.	15.00	30.00	14.00	59.00	45.00						
	46		A.	24.19	25.14	26.12	29.19	30.25						
	47		B.	49.47	50.46	51.46	52.41	55.47						
	48	ε Geminorum - - -	C.	14.49	15.60	16.47	17.55	18.45	35 16.63	0.08	8.68	6 35 25.39	6.36	
	49		D.	37.85	40.99	42.00	42.96	43.85						
	50		E.	3.01	3.95	6.91	7.82	8.74						
	51		B.	27.39	28.43	29.43	30.49	33.32						
	52	B. A. C., 2266 - - -	C.	53.33	54.34	55.32	56.34	57.35	47 55.31	+ 0.19	+ 8.70	6 48 4.20	— 4.47	
	53		D.	17.04	20.20	21.24	22.20	23.19						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
Feb. 21, 6.4	+ 8.65	+ 0.124	+ 0.131	— 0.142	— 0.015

2. Cloudy. *r.*
Feb. 20. 7*h.* 20*m.* Image west 0.04 Clp. west.
21. Azimuth cor. from δ Ursæ Minoris, S. P., and α Columbæ.

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	s.	s.	h. m. s.	s	
	1		B.	19.41	20.35	21.32	22.27	25.12						
Feb. 21	2	ζ Geminorum - - -	C.	43.64	44.67	45.63	46.62	47.61	55 45.63	+ 0.06	+ 8.71	6 55 54.40	— 6.24	R.
	3		D.	6.06	8.94	9.94	10.92	11.99						
	4		C.	19.95	20.92	21.92	22.94	23.89						
	5	B. A. C., 2331 - - -	D.	44.22	47.19	48.30	49.30	50.27	0 47.86	—25.94	8.73	7 0 30.66	6.78	
	6		E.	10.54	11.60	14.61	15.61	16.68						
	7		B.	7.55	8.57	9.52	10.70	13.89						
	8	B. A. C., 2371 - - -	C.	34.10	35.10	36.07	37.12	38.18	6 36.14	+ 0.20	8.74	7 6 45.07	4.41	
	9		D.	58.56	1.63	2.64	3.70	4.71						
	10		B.	16.43	17.52	18.50	19.50	22.41						
	†11	δ Geminorum - - -	C.	41.29	42.23	43.22	44.18	45.11	11 43.13	+ 0.06	8.75	7 11 51.94	6.37	
	12		D.	3.82	6.62	7.78	8.68	9.62						
	13		C.	6.73	7.78	8.74	9.78	10.80						
	14	B. A. C., 2453 - - -	D.	31.00	34.02	35.25	36.35	37.40	18 34.74	—25.72	8.77	7 18 17.79	4.52	
	15		E.	57.41	58.43	1.46	2.52	3.50						
	16		B.	8.91	9.91	10.85	11.82	15.12						
	17	α^2 Geminorum - - -	C.	35.87	36.87	37.86	38.83	39.78	25 37.83	+ 0.02	8.78	7 25 46.63	6.92	
	18		D.	0.50	3.81	4.72	5.79	6.75						
	19		A.	31.23	32.27	33.29	36.30	37.40						
	20		B.	56.89	57.84	58.82	59.78	2.72						
	21	Moon's 1st Limb - -	C.	21.79	22.66	23.59	24.61	25.63	34 23.68	0.09	8.80	7 34 32.57	- - -	
	22		D.	44.84	47.80	48.72	49.72	50.70						
	23		E.	9.95	10.87	13.88	14.80	15.80						
	24		A.	59.93	0.89	2.05	5.07	6.07						
	25		B.	25.59	26.50	27.50	28.53	31.63						
	26	φ Geminorum - - -	C.	51.22	52.24	53.25	54.31	55.28	44 53.24	+ 0.08	8.82	7 45 2.14	6.70	
	27		D.	14.75	18.02	19.00	19.97	20.96						
	28		E.	40.44	41.47	44.49	45.48	46.40						
22	29	η Cancri - - - - -	--	- -	5.02	31.05	57.08	- -	24 31.50	— 0.02	11.41	8 24 42.90	6.46	Y.
	30	Moon's 1st Limb - -	--	40.04	5.01	31.03	7.09	22.02	33 31.38	+ 0.06	11.42	8 33 42.86	- - -	
	31	δ Cancri - - - - -	--	- -	- -	38.04	4.04	28.04	37 3.73	—25.26	11.42	8 36 49.90	6.38	
	32	α Cancri - - - - -	--	55.09	19.00	44.05	9.07	- -	50 32.28	+12.17	11.42	8 50 55.87	6.16	
	33	α Hydræ - - - - -	--	48.05	11.08	36.07	1.03	24.03	20 36.52	0.12	11.42	9 20 48.06	5.61	
	34	ε Leonis - - - - -	--	57.00	21.09	49.00	15.09	40.09	37 48.94	0.04	11.43	9 38 0.41	6.57	
	35		A.	53.34	54.31	55.20	57.88	58.88						
	36		B.	16.50	17.44	18.35	19.31	21.87						
24	37	π Leonis - - - - -	C.	39.45	40.43	41.31	42.24	43.14	52 41.33	0.24	13.27	9 52 54.83	6.05	
	38		D.	0.76	3.59	4.48	5.41	6.31						
	39		E.	23.72	24.55	27.38	28.19	29.11						
	40		A.	58.62	59.62	0.58	3.42	4.48						
	41		B.	22.24	23.10	24.11	25.06	27.65						
	42	α Leonis - - - - -	C.	45.52	46.50	47.52	48.48	49.40	0 47.38	0.23	13.27	10 1 0.87	6.13	
	43		D.	7.00	9.80	10.74	11.73	12.61						
	44		E.	30.30	31.21	34.07	34.90	35.82						
	45		A.	17.20	18.23	19.15	22.00	23.04						
	46		B.	41.72	42.56	43.41	44.38	47.50						
	†47	γ^1 Leonis - - - - -	C.	5.75	6.80	7.80	8.80	9.67	12 7.82	0.21	13.27	10 12 21.29	— 6.39	
	48		D.	28.46	31.21	32.22	33.21	34.08						
	49		E.	52.38	53.48	56.50	57.46	58.41						
	50		A.	9.97	10.97	11.96	14.74	15.85						
	51		B.	33.60	34.48	35.37	36.32	39.03						
	52	Moon's 1st Limb - -	C.	57.03	57.91	58.76	59.66	0.52	27 58.80	+ 0.25	+13.27	10 28 12.32	- - -	
	53		D.	18.57	21.41	22.29	23.20	24.08						
	54		E.	42.05	42.83	45.66	46.50	47.29						

11. Unsteady.
47. Stars unsteady.

Feb. 21. Image 0.00 r. Clp. west.
22. Battery not in order. Made these observations with eye and ear, over the outside wires of each set and the middle wire. Night cloudy; stars steady.
22. 9*h.* 50*m.* Image west 0.00 r. Clp west.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
Feb. 22, 9.1	+ 11.42	+ 0.010	+ 0.115	— 0.122	— 0.015
24, 10.3	+ 13.27	+ 0.000	+ 0.238	— 0.122	— 0.015

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	s.	s.	h. m. s.	s.	
	1		A.	28.30	29.10	30.05	32.73	33.78						
	2		B.	51.80	52.76	53.68	54.57	57.43						
Feb. 24	3	Moon's 2d Limb - -	C.	15.20	16.32	17.21	18.08	18.90	30 17.06	+ 0.25	+13.27	10 30 30.58	- - -	Y.
	4		D.	36.81	39.80	40.71	41.54	42.38						
	5		E.	0.21	1.09	3.84	4.70	5.55						
	6		B.	15.94	16.81	17.78	18.77	21.30						
	7	37 Sextantis - - - -	C.	38.90	39.78	40.62	41.50	42.46	38 40.69	0.21	13.27	10 38 54.17	— 5.98	
	8		D.	0.06	2.79	3.70	4.53	5.42						
	9		A.	57.82	58.68	59.64	2.51	3.51						
	10		B.	21.16	22.21	23.21	24.16	26.62						
	11	*l* Leonis - - - - -	C.	44.51	45.52	46.44	47.30	48.19	41 46.31	0.23	13.27	10 41 59.81	6.05	
	12		D.	5.89	8.63	9.73	10.60	11.46						
	13		E.	29.02	29.95	32.79	33.70	34.51						
	14		A.	24.80	25.60	26.47	29.20	30.20						
	15		B.	47.45	48.38	49.33	50.27	52.91						
	16	*d* Leonis - - - - -	C.	10.39	11.35	12.18	13.11	13.90	53 12.16	0.24	13.27	10 53 25.67	5.91	
	17		D.	31.34	33.99	35.00	35.90	36.85						
	18		E.	54.28	55.11	57.85	58.61	59.48						
	19		A.	52.05	53.07	53.97	56.54	57.56						
	20		B.	15.29	16.20	17.10	17.95	20.81						
	21	χ Leonis - - - - -	C.	38.16	39.18	40.00	41.02	41.88	57 40.02	0.24	13.27	10 57 53.53	5.93	
	22		D.	59.40	2.11	3.08	4.04	4.84						
	23		E.	22.39	23.25	26.16	26.88	27.69						
	24		A.	40.38	41.34	42.23	45.02	45.91						
	25		B.	3.32	4.22	5.05	6.06	8.82						
	26	p^5 Leonis - - - - -	C.	26.25	27.16	27.92	28.76	29.60	6 27.89	0.25	+13.27	11 6 41.41	5.84	
	27		D.	46.85	49.90	50.79	51.71	52.51						
	28		E.	9.87	10.77	13.51	14.25	15.12						
	29		A.	2.37	3.33	4.20	6.97	7.94						
	30		B.	25.56	26.52	27.50	28.39	31.12						
25	31	*a* Hydræ - - - - -	C.	38.44	39.42	50.39	51.31	52.19	20 50.36	0.15	— 2.42	9 20 48.09	5.61	
	32		D.	9.75	12.53	13.43	14.33	15.18						
	33		E.	32.71	33.69	36.41	37.23	38.08						
	34	✿ (9) —10° 56′ - -	B.	52.62	53.55	54.45	55.30	58.10	40 6.16	11.54	2.40	9 40 15.29	5.60	
	35		C.	15.60	16.61	17.52	18.46	19.35						
	36	✿ (9) —10° 58′ - -	B.	45.12	45.98	46.91	47.84	50.53	41 10.10	+ 0.12	2.40	9 41 7.82	5.60	
	37		D.	29.78	32.45	33.24	34.11	35.04						
	38	Rumker, 3002 - - -	C.	56.19	57.16	58.07	59.03	59.87	48 9.99	—11.83	2.40	9 47 55.75	6.38	
	39		D.	18.42	21.38	22.32	23.22	24.21						
	40		C.	55.25	56.21	57.05	57.91	58.80						
	41	π Leonis - - - - -	D.	16.41	19.20	20.12	21.06	21.89	53 19.68	—22.54	2.39	9 52 54.74	6.05	
	42		E.	39.36	40.32	43.06	43.89	44.75						
	43		B.	48.87	49.76	50.73	51.61	54.42						
	44	Weisse, 1259 - - -	C.	12.21	13.15	14.04	15.00	15.79	59 14.09	+ 0.07	2.39	9 59 11.77	6.18	
	45		D.	33.79	36.61	37.53	38.47	39.40						
	46		B.	32.52	33.56	34.63	35.73	39.35						
	47	B. A. C., 3468 - - -	C.	1.39	2.58	3.63	4.80	5.80	3 3.66	0.01	2.39	10 3 1.28	7.13	
	48		D.	28.01	31.54	32.64	33.80	34.90						
	49		B.	57.45	58.41	59.32	0.22	3.15						
	50	γ^1 Leonis - - - - -	C.	21.69	22.66	23.61	24.50	25.50	12 23.62	+ 0.05	— 2.38	10 12 21.29	— 6.39	
	51		D.	44.03	47.11	47.98	48.90	49.75						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h. Feb. 24, 10.3	s. + 13.27	s. 0.000	s. + 0.238	s. — 0.122	s. — 0.015

Feb. 24. 11*h*. 15*m*. Image west *r*. 0.12. Clp. west.

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	s.	s.	h. m. s.	s.	
	1		B.	18.64	19.69	20.80	21.90	25.23						
Feb. 25	2	B. A. C., 3559 - - -	C.	46.79	48.05	49.06	50.14	51.11	17 49.02	+ 0.01	— 2.37	10 17 46.65	— 6.94	Y.
	3		D.	12.66	16.19	17.29	18.34	19.48						
	4		B	45.15	46.22	47.28	48.41	51.72						
	5	B. Z., 499, 114, +36°12′	C.	13.34	14.40	15.45	16.55	17.58	32 15.51	0.01	2.36	10 32 13.16	6.88	
	6		D.	39.20	42.65	43.80	44.93	46.04						
	7		A.	13.59	14.58	15.42	18.22	19.16						
	8		B.	37.03	37.90	38.81	39.71	42.47						
	9	*l* Leonis - - - - -	C.	0.14	1.09	2.07	2.95	3.83	42 1.98	+ 0.11	2.36	10 41 59.73	6.06	
	10		D.	21.44	24.30	25.28	26.21	27.02						
	11		E	44.75	45.69	48.39	49.30	50.14						
	12		C.	22.60	23.79	24.73	25.83	26.73						
	13	✡ (8.9) +35° 56′ - -	D.	48.41	51.93	52.89	53.91	55.01	49 52.43	—27.66	2.35	10 49 22.41	6.76	
	14		E.	16.67	17.72	21.02	22.08	23.09						
	15		B.	3.16	4.04	5.06	5.89	8.73						
	16	*d* Leonis - - - - -	C.	26.14	26.98	27.81	28.73	29.55	53 27.88	+ 0.09	2.35	10 53 25.62	5.91	
	17		D.	47.19	49.83	50.82	51.71	52.57						
	18		A.	56.11	57.10	58.00	0.64	1.68						
	19		B.	19.08	19.92	20.85	21.71	24.43						
	20	p^5 Leonis - - - - -	C.	41.83	42.77	43.60	44.50	45.32	6 43.60	0.13	2.34	11 6 41.40	5.84	
	21		D.	2.68	5.51	6.51	7.41	8.25						
	22		E.	25.62	26.48	29.22	30.00	30.87						
	23		A.	39.62	40.51	41.45	44.21	45.12						
	24		B.	3.22	4.15	5.07	6.00	8.76						
	25	*δ* Hydræ et Crateris - -	C.	26.61	27.59	28.48	29.38	30.30	12 28.50	0.16	2.33	11 12 26.33	5.70	
	26		D.	48.40	51.22	52.13	53.00	53.85						
	27		E.	11.76	12.68	15.49	16.32	17.23						
	28		B.	27.59	28.53	29.50	30.38	33.07						
	29	*τ* Leonis - - - - -	C	50.51	51.42	52.26	53.07	53.97	20 52.28	0.09	2.33	11 20 50.05	5.86	
	30		D.	11.56	14.27	15.22	16.03	16.89						
	31		A.	52.90	53.84	54.71	57.65	58.71						
	32		B.	16.44	17.32	18.34	19.17	22.00						
	33	Moon's 2d Limb - -	C.	39.88	40.81	41.61	42.43	43.28	26 41.59	0.14	2.32	11 26 39.41	- - -	
	34		D.	1.27	4.17	5.00	5.96	6.84						
	35		E.	24.65	25.49	28.30	29.09	29.98						
	36		B.	30.38	31.17	32.13	32.97	35.72						
	†37	*υ* Leonis - - - - -	C.	53.10	53.93	54.75	55.78	56.70	29 54.88	0.10	2.32	11 29 52.66	5.80	
	38		D.	14.09	16.78	17.72	18.55	19.41						
	39		A.	57.46	58.51	59.41	2.28	3.10						
	40		B.	20.70	21.60	22.45	23.37	26.20						
27	41	*q* Virginis - - - -	C.	43.78	44.73	45.56	46.44	47.32	26 45.53	0.20	6.72	12 26 39.00	5.69	
	42		D.	4.77	7.77	8.65	9.47	10.36						
	43		E.	27.95	28.84	31.55	32.49	33.45						
	44		B.	22.21	23.19	24.11	24.91	27.71						
	45	*f* Virginis - - - -	C.	45.08	46.00	46.86	47.84	48.70	29 46.95	0.16	6.72	12 29 40.39	5.70	
	46		D.	6.28	8.99	9.91	10.82	11.60						
	47		A.	7.82	8.73	9.63	12.23	13.31						
	48		B.	31.05	31.81	32.67	33.62	36.32						
	49	28 Virginis - - - -	C.	53.67	54.72	55.55	56.42	57.35	34 55.57	+ 0.19	— 6.71	12 34 49.06	— 5.70	
	50		D.	14.78	17.62	18.47	19.38	20.24						
	51		E.	37.81	38.65	41.31	42.15	43.04						

37. Cloudy.

Feb. 25. } Image r. 0.00. Clp. west.
11*h*. 50*m*. } Image west 0.09. Clp. east.

Feb. 27. Azimuth cor. from Polaris, S. P., and *α* Virginis.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m*.	*n*.	*c*.
h.	s.	s.	s.	s.	s.
Feb. 25, 10.5	— 2.37	+ 0.047	+ 0.115	— 0.122	— 0.015
27, 13.2	— 6.64	+ 0.103	+ 0.188	— 0.101	— 0.036

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	s.	s.	h. m. s.	s.	
	1		B.	29.05	29.85	30.82	31.70	34.35						
Feb. 27	2	Weisse, 757 - - -	C.	51.71	52.79	53.61	54.45	55.30	44 53.55	+ 0.15	— 6.69	12 44 47.01	— 5.65	Y.
	3		D.	12.51	15.45	16.38	17.24	18.10						
	4	Polaris, S. P. - - -	C.	55.00	17.00	44.00	6.00	32.00	7 42.80	- -	- -	- - - -	- - -	
	5		A.	13.10	14.06	14.87	17.63	18.62						
	6		B.	36.25	37.26	38.13	38.95	41.69						
	7	α Virginis - - - -	C.	59.63	0.51	1.43	2.25	3.15	18 1.33	0.20	6.63	13 17 54.90	5.63	
	8		D.	20.77	23.68	24.51	25.41	26.31						
	9		E.	44.21	45.04	47.72	48.63	49.48						
	10		A.	58.09	59.09	0.07	2.58	3.60						
	11		B.	21.11	22.04	22.98	23.81	26.53						
	12	ζ Virginis - - - -	C.	43.80	44.67	45.61	46.41	47.25	27 45.60	+ 0.18	6.62	13 27 39.16	5.49	
	13		D.	4.81	7.64	8.51	9.38	10.22						
	14		E.	27.51	28.44	30.99	32.00	32.87						
	15		B.	31.91	36.69	42.35	47.19	3.03						
	16	l 2d Comet, '52, +80° 0′	C.	42.84	48.43	53.80	59.14	4.00	36 53.91	— 0.59	6.60	13 36 46.71	6.26	
	17		D.	45.18	0.99	5.73	11.05	16.28						
	18		A.	22.48	23.47	24.48	27.31	28.35						
	19		B.	46.83	47.73	48.63	49.50	52.61						
	20	η Bootis - - - - -	C.	10.92	11.90	12.86	13.78	14.65	48 12.75	+ 0.15	6.58	13 48 6.32	5.23	
	21		D.	33.14	35.97	36.85	37.82	38.76						
	22		E.	57.16	58.06	1.00	1.84	2.71						
28	23	Polaris, S. P. - - -	C.	59.00	24.00	46.00	12.00	38.00	7 47.80	0.24	6.61	- - - -	- - -	R.
	24		A.	13.13	14.26	15.20	17.74	18.75						
	25		B.	36.61	37.53	38.44	39.31	42.10						
	26	α Virginis - - - -	C.	59.78	0.80	1.68	2.53	3.47	18 1.56	0.02	6.61	13 17 54.97	5.65	
	27		D.	20.99	23.81	24.72	25.60	26.51						
	28		E.	44.17	45.16	47.95	48.89	49.79						
	29		A.	58.42	59.37	0.26	2.67	3.63						
	30		B.	21.24	22.22	23.17	24.13	26.53						
	31	ζ Virginis - - - -	C.	43.84	44.70	45.61	46.59	47.52	27 45.73	0.03	6.61	13 27 39.16	5.51	
	32		D.	4.81	7.67	8.53	9.45	10.33						
	33		E.	27.60	28.55	31.17	32.17	33.11						
	34		A.	19.81	20.70	21.63	24.29	25.45						
	35		B.	43.63	44.63	45.59	46.41	49.26						
	36	83 Virginis - - -	C.	7.32	8.24	9.20	10.17	11.11	37 9.10	+ 0.02	6.61	13 37 2.52	5.70	
	37		D.	28.94	31.85	32.86	33.79	34.61						
	38		E.	52.65	53.55	56.30	57.25	58.21						
	39		B.	2.86	3.64	4.64	5.63	8.37						
	40	B. A. C., 4613 - -	C.	27.04	28.03	28.97	29.84	30.73	41 28.90	— 0.01	6.60	13 41 22.28	5.76	
	41		D.	49.36	52.11	53.17	54.11	55.05						
	42		A.	55.71	56.67	57.60	0.30	1.30						
	43		B.	18.71	19.62	20.53	21.38	24.00						
	44	τ Virginis - - - -	C.	41.45	42.41	43.30	44.32	45.26	54 43.27	+ 0.03	6.60	13 54 36.69	5.40	
	45		D.	2.48	5.12	6.05	6.95	7.90						
	46		E.	25.28	26.20	28.81	29.65	30.65						
	47		B.	23.49	24.51	25.48	26.40	29.05						
	48	B. A. C., 4691 - -	C.	46.87	47.96	48.95	49.91	50.89	59 48.99	— 0.01	6.60	13 59 42.38	5.64	
	49		D.	9.07	11.65	12.58	13.56	14.49						
	50		B.	39.90	40.85	41.79	42.75	46.10						
	†51	B. A. C., 4719 - -	C.	6.05	6.94	7.90	8.95	10.03	7 7.85	— 0.02	— 6.60	14 7 1.22	— 5.92	
	52		D.	29.98	32.54	33.51	34.68	35.72						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m.	n.	c.
h.	s.	s.	s.	s.	s.
Feb. 27, 13.2	— 6.64	+ 0.103	+ 0.188	— 0.101	— 0.036
28, 14.3	— 6.60	+ 0.005	+ 0.035	+ 0.033	— 0.036

51. Dim.

Feb. 27. 12h. { Image west, 0.16 r. Clp. east. west, 0.11. Clp. west.

Feb. 28. Azimuth cor. from Polaris, S. P., and α Virginis.

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DATE.	Number.	OBJECT.	Set	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s	s.	s.	s	s.	m. s.	s.	s.	h. m. s.	s.	
	1		B.	28.31	29.27	30.24	31.20	33.77						
Feb. 28	†2	Lalande, 26, 172 - -	C.	52.12	53.08	54.02	55.00	56.01	11 54.09	— 0.01	— 6.60	14 11 47.47	— 5.67	R.
	3		D.	14.26	17.04	18.07	19.04	19.89						
	4		A.	8.98	10.06	11.11	13.85	14.93						
	5		B.	34.08	35.05	36.02	36.95	39.93						
	†6	Moon's 2d Limb - -	C.	58.82	59.76	0.79	1.73	2.81	21 1.09	0.19	6.60	14 21 54.30	- - -	
	7		D.	- -	25.05	26.07	27.02	27.98						
	8		E	46.70	47.70	50.81	51.77	52.65						
	9		B.	44.57	45.47	46.40	47.30	50.28						
	10	B. A. C., 4814 - - -	C.	8.60	9.62	10.65	11.68	12.62	27 10.60	0.01	6.60	14 27 3.99	5.68	
	11		D.	30.90	33.70	34.72	35.75	36.78						
	12		C.	1.17	2.09	2.95	3.81	4.67						
	13	Weisse, 540 - - -	D.	21.94	24.71	25.61	26.42	27.38	30 25.26	—22.44	6.60	14 29 56.21	5.33	
	14		E.	44.59	45.68	48.32	49.28	50.25						
	15		B	9.80	10.62	11.53	12.41	15.00						
	16	B. A. C., 4869 - - -	C.	32.53	33.43	34.43	35.29	36.23	38 34.27	0.00	6.60	14 38 27.67	5.19	
	17		D.	53.24	55.97	56.91	57.85	58.79						
	18		A.	31.34	32.30	33.30	35.77	36.90						
	19		B.	55.18	56.10	57.08	57.98	0.49						
	†20	α^2 Libræ - - - - - -	C	18.46	19.40	20.40	21.35	22.29	43 20.46	+ 0.02	6.60	14 43 13.88	5.54	
	21		D.	40.30	43.35	44.31	45.27	46.19						
	22		E.	3.75	4.72	7.49	8.49	9.46						
	23		A.	13.09	14.00	14.99	18.11	19.49						
	24		B.	38.52	39.40	40.30	41.18	44.40						
	†25	20 Libræ - - - - - -	C	3.30	4.32	5.34	6.28	7.40	56 5.32	0.01	6.60	14 55 58.74	5.75	
	26		D.	26.31	29.36	30.38	31.40	32.41						
	27		E.	51.52	52.52	55.30	56.30	57.40						
	28		B	42.56	43.52	44.48	45.31	47.78						
	†29	Weisse XV, 2 - - -	C.	5.31	6.36	7.30	8.32	9.25	2 7.31	0.00	6.60	15 2 0.71	5.15	
	30		D.	26.22	29.36	30.30	31.28	32.25						
	31		A.	52.38	53.35	54.27	56.98	58.03						
	32		B	15.67	16.64	17.60	18.49	21.31						
	33	β Libræ - - - - - -	C.	38.61	39.60	40.52	41.41	42.38	9 40.51	+ 0.02	6.60	15 9 33.93	5.27	
	34		D.	59.68	2.61	3.53	4.48	5.40						
	35		E.	22.70	23.70	26.51	27.47	28.38						
	36		B.	23.93	24.95	25.94	26.89	30.00						
	†37	B. A. C., 5066 - - -	C.	49.36	50.41	51.38	52.34	53.33	15 51.31	— 0.02	6.60	15 15 44.70	5.77	
	38		D.	12.86	15.57	16.58	17.54	18.64						
	39		A.	3.21	4.17	5.16	8.16	9.22						
	40		B.	28.84	29.74	30.62	31.65	34.85						
	41	α Coronæ Borealis - -	C.	54.42	55.43	56.40	57.30	58.26	28 56.37	+ 0.05	6.60	15 28 49.82	4.29	
	42		D.	17.98	21.04	22.07	22.97	23.98						
	43		E.	43.62	44.57	47.59	48.52	49.46						
	44		B.	28.64	29.55	30.42	31.33	34.40						
Mar. 1	45	✡ (8) +18° 35′ - -	C	52.81	53.71	54.68	55.63	56.52	42 54.64	0.04	6.62	13 42 48.06	5.32	Y.
	46		D.	14.95	18.04	18.81	19.64	20.54						
	47		A.	22.83	23.69	24.53	27.47	28.60						
	48		B	46.95	47.90	48.86	49.76	52.61						
	49	η Bootis - - - - - -	C.	11.11	12.05	12.91	13.87	14.80	48 12.91	+ 0.07	— 6.63	13 48 6.35	— 5.28	
	50		D.	33.28	36.12	37.04	37.95	38.81						
	51		E.	57.34	58.30	1.12	1.95	2.90						

2. Dim.
6, 20, 25. Unsteady.
29. Very dim.
37. Dim, preceded by a smaller star.

Feb. 28. 15*h*. 35*m*. Image 0.07 r. west. Clp. west.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h. Feb. 28, 14.3	s. — 6.60	s. + 0.005	s. + 0.035	s. + 0.033	s. —0.036

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DATE.	Number.	OBJECT.	Set	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	s.	s.	h. m. s.	s.	
	1		A.	55.92	56.75	57.71	0.43	1.44						
	2		B.	18.80	19.66	20.61	21.45	24.25						
Mar. 1	3	τ Virginis - - - -	C.	41.53	42.51	43.40	44.41	45.21	54 43.40	+ 0.06	— 6.64	13 54 36.82	— 5.42	Y.
	4		D.	2.61	5.39	6.29	7 21	8.07						
	5		E.	25.38	26.35	28.90	29.82	30.71						
	6		A.	37.55	38.68	39.52	42.60	43.51						
	7		B.	2.08	2.51	3.95	4.96	8.03						
	8	α Bootis - - - - -	C.	26.40	27.31	28.20	29.07	30.00	9 28.17	+ 0.07	6.66	14 9 21.59	5.04	
	9		D.	48.63	51.62	52.50	53.43	54.33						
	10		E.	12.87	13.86	16.69	17.62	18.44						
	11		C.	51.79	52.61	53.52	54.50	55.40						
	12	Weisse, 423 - - -	D.	12.84	15.72	16.65	17.41	18.38	24 16.12	—22.48	6.68	14 23 46.96	5.41	
	13		E.	35.71	36.62	39.32	40.20	41.12						
	14		A.	10.11	11.14	12.20	15.19	16.31						
	15		B.	35.87	36.90	38.05	38.99	41.98						
	16	ε Bootis - - - - -	C.	1.64	2.71	3.69	4.76	5.70	39 3.66	+ 0.08	6.70	14 38 57.04	4.75	
	17		D.	25.20	28.50	29.42	30.35	31.38						
	18		E.	51.13	52.11	55.04	56.10	57.00						
	19		A.	31.41	32.32	33.19	35.89	36.94						
	20		B.	55.07	56.08	56.85	57.83	0.71						
	21	α^2 Libræ - - - - -	C.	18.73	19.72	20.57	21.47	22.32	43 20.55	0.04	6.71	14 43 13.88	5.56	
	22		D.	40.38	43.41	44.28	45.22	46.09						
	23		E.	4.11	5.01	7.81	8.67	9.57						
	24		B.	45.04	48.58	51.63	54.89	5.49						
	25	β Ursæ Minoris - - -	C.	11.27	14.91	18.34	21.78	25.07	51 18.23	0.11	6.72	14 51 11.62	2.49	
	26		D.	30.87	41.48	44.54	47.97	51.78						
	27		A.	13.38	14.38	15.47	18.22	19.29						
	28		B.	38.34	39.41	40.39	41.41	44.41						
	29	20 Libræ - - - - -	C.	3.58	4.55	5.46	6.45	7.40	56 5.49	0.03	6.72	14 55 58.80	5.78	
	30		D.	26.58	29.56	30.65	31.69	32.53						
	31		E.	51.70	52.71	55.61	56.57	57.51						
	32		B.	1.15	2.08	3.10	3.99	6.83						
	33	ι^1 Libræ - - - - -	C.	25.30	26.28	27.17	28.13	28.96	4 27.14	0.00	6.73	15 4 20.41	5.60	
	34		D.	47.31	50.25	51.20	52.19	53.13						
	35		A.	52.40	53.38	54.32	57.08	58.09						
	36		B.	15.72	16.63	17.55	18.47	21.18						
	37	β Libræ - - - - -	C.	38.72	39.62	40.61	41.45	42.31	9 40.54	0.05	6.74	15 9 33.85	5.30	
	38		D.	59.88	2.74	3.72	4.62	5.51						
	39		E.	23.09	23.90	26.65	27.52	28.38						
	40		A.	50.09	51.13	52.12	55.17	56.18						
	41		B.	15.81	16.83	17.82	18.81	21.91						
	42	Moon's 2d Limb - -	C.	41.40	42.48	43.50	44.57	45.40	22 43.42	0.03	6.76	15 22 36.69	- - -	
	43		D.	4.90	8.19	9.15	9.99	10.93						
	44		E.	30.71	31.59	34.68	35.61	36.54						
	45		A.	46.14	47.07	47.91	50.62	51.58						
	46		B.	9.17	10.11	11.02	11.90	14.55						
	47	α Serpentis - - - -	C.	32.19	33.05	33.90	34.74	35.67	37 33.88	+ 0.06	6.78	15 37 27.16	4.79	
	48		D.	53.21	55.82	56.81	57.73	58.67						
	49		E.	16.15	17.09	19.75	20.65	21.51						
	50		B.	58.81	59.74	0.70	1.71	4.52						
	51	λ Libræ - - - - -	C.	22.90	23.93	24 87	25.80	26.75	45 24.88	0.00	— 6.79	15 45 18.09	— 5.48	
	52		D.	45.20	48.22	49.10	50.03	50.91						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s	s.	s.	s.
Mar. 1, 14.7	— 6.71	— 0.083	+ 0.061	+ 0.052	— 0.036

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	s.	s.	h. m. s.	s.	
	1		A.	24.53	25.51	26.56	29.59	30.56						
	2		B.	49.40	50.32	51.33	52.30	55.22						
Mar. 1	3	δ Scorpii - - - - -	C.	13.99	14.92	15.85	16.80	17.76	52 15.88	+ 0.03	— 6.80	15 52 9.12	— 5.54	Y.
	4		D.	36.52	39.66	40.61	41.59	42.48						
	5		E.	1.32	2.30	5.11	5.98	6.92						
	6		A.	39.97	40.84	41.91	44.70	45.75						
	7		B.	4.24	5.21	6.11	7.03	9.91						
	8	β^1 Scorpii - - - - -	C.	28.45	29.41	30.29	31.18	32.09	57 30.24	+ 0.04	6.81	15 57 23.47	5.43	
	9		D.	50.56	53.48	54.32	55.41	56.29						
	10		E.	14.71	15.75	18.58	19.41	20.29						
	11		B.	31.32	32.36	33.30	34.33	37.23						
4	12	β Geminorum - - -	C.	57.19	58.18	59.14	0.18	1.11	36 59.19	— 0.10	7.88	7 36 51.21	6.57	
	13		D.	20.91	24.12	25.13	26.19	27.11						
	14		B.	17.43	18 41	19.40	20.34	23.20						
	15	B. A. C., 2632 - - -	C.	41.73	42.73	43.61	44.59	45.52	47 43.66	0.08	7.89	7 47 35.69	6.27	
	16		D.	4.12	7.08	8.04	8.90	9.79						
	17	B. A. C., 2677 - - -	C.	24.73	33.10	39.11	46.05	54.16	57 39.43	1.04	7.90	7 57 30.49	26.85	
	18	λ Ursæ Minoris, S. P. -	C.	10.00	18.00	36.00	53.00	5.00	1 36.40	- -	- -	- - - - -	- - -	
	19		B.	24.51	25.60	26.50	27.43	30.30						
	20	η Cancri - - - - -	C.	48.94	49.91	50.81	51.80	52.70	24 50.84	0.08	7.95	8 24 42.81	6.39	
	21		D.	11.39	14.18	15.21	16.17	17.09						
	22	G. C., 773 - - - -	C.	1.49	6.38	11.59	17.55	23.61	35 12.12	0.77	7.95	8 35 3.41	15.64	
	23		A.	47.69	48.62	49.50	52 16	53.25						
	24		B.	10.80	11.64	12.58	13.51	16.17						
	25	ε Hydræ - - - - -	C.	33.82	34.67	35.41	36.39	37.29	39 35.48	— 0.03	7.95	8 39 27.50	— 5.89	
	26		D.	54.70	57.60	58.54	59.41	0.26						
	27		E.	17.76	18.74	21.38	22.24	22.94						
	28		B.	52.00	37.00	23.00	9.00	25.00						
7	29	δ Ursæ Minoris, S. P. -	C.	39.00	13.00	59.00	45.00	29 00	16 59.53	0.00	5.31	18 16 54.23	+ 36.22	R.
	30		D.	37.00	56.00	36.00	19.00	3.00						
	31	51 (Hev.) Cephei - - -	C.	2.00	23.00	40.00	0.00	19.00	34 40.80	+ 0.11	5.29	6 34 35.61	— 57.04	
	32		B.	37.30	38.41	39.55	40.51	43.40						
	†33	✡ —27° 09′ - - -	C.	3.14	4.19	5.24	6.22	7.20	45 5.13	+ 0.01	5.29	6 44 59.85	4.24	
	34		D.	26.61	29.72	30.89	31.79	32.83						
	35		C.	7.02	8.11	9.08	9.99	11.06						
	36	B. A. C., 2266 - - -	D.	31.10	33.98	34.96	36.09	36.99	48 34.55	—25.45	5.28	6 48 3.81	4.23	
	37		E.	56.89	57.87	0.73	1.69	2.70						
	38		A.	22.83	23.84	24.91	27.91	29.19						
	39		B.	49.08	50.07	51.05	52.05	55.20						
	40	ε Canis Majoris - - -	C.	15.03	16.05	17.11	18.04	19.08	53 16.96	+ 0.04	5.28	6 53 11.72	4.20	
	41		D.	38.91	41.65	42.84	43.75	44.81						
	42		E.	4.81	5.80	9.04	10.03	10.95						
	43		B.	7.12	8.14	9.29	10.14	13.42						
	44	B. A. C., 2331 - - -	C.	33.69	34.73	35.71	36.78	37.69	0 35.64	0.05	5.28	7 0 30.42	6.58	
	45		D.	57.93	0.94	1.94	3.04	4.08						
	46		B.	38.39	39.38	40.30	41.23	44.09						
	47	B. A. C , 2363 - - -	C.	3.45	4.45	5.45	6.32	7.27	6 5.37	0.05	5.27	7 6 0.15	6.30	
	48		D.	26.38	29.58	30.47	31.48	32.39						
	49		A.	5.83	6.64	7.60	10.58	11.59						
	50		B.	30.29	31.28	32.23	33.19	36.27						
	51	δ Geminorum - - -	C.	54.89	55.90	56.90	57.81	58.74	11 56.90	+ 0.08	— 5.27	7 11 51.71	— 6.18	
	52		D.	17.89	20.68	21.62	22.46	23.43						
	53		E.	42.30	43.29	45.99	47.06	47.98						

33. Recorded B. A. C., 2244.

March 1. 16*h.* 10*m.* Image west 0. 11. Clp. west.
March 4. 8*h.* 50*m* Image west 0. 07. Clp. west.
March 4. Azimuth cor. from λ Ursæ Minoris and η Cancri.
March 7. Azimuth cor. from δ Ursæ Minoris, S. P., and 51 (Hev.) Cephei.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
Mar. 4, 8.2	— 7.92	— 0.071	— 0.010	— 0.059	— 0.036
7, 7.6	— 5.25	+ 0.043	+ 0.070	+ 0.040	— 0.036

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DATE.	Number.	OBJECT.	Set	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s	m. s	s.	s.	h. m. s	s.	
	1		B.	54.40	55.40	56.33	57.31	0.49						
Mar. 7	2	B. A. C., 2453 - - -	C.	20.60	21.60	22.61	23.63	24.78	18 22.74	0.00	— 5.26	7 18 17.49	— 4.32	R.
	3		D.	45.18	48.19	49.21	50.24	51.21						
	4		B.	2.04	2.96	3.94	4.87	7.30						
	† 5	B. A. C., 2470 - - -	C.	25.19	26.09	27.05	27.94	28.87	21 27.07	+ 0.02	5.26	7 21 21.83	5.02	
	6		D.	46.70	49.32	50.34	51.23	52.22						
	7		A.	55.29	56.52	57.56	0.89	2.12						
	8		B.	22.81	23.73	24.70	25.77	29.02						
	9	α^2 Geminorum - - -	C.	49.61	50.60	51.50	52.51	53.50	25 51.56	0.09	5.26	7 25 46.39	6.75	
	10		D.	14.2[illegible]	17.48	18.60	19.59	20.68						
	11		E.	41.25	42.20	45:28	46.30	47.27						
	12		B.	14.51	15.40	16.32	17.29	20.09						
	13	Rumker, 2282 - - -	C.	37.70	38.80	39.84	40.80	41.72	39 39.86	+ 0.04	5.25	7 39 34.65	5.93	
	14		D.	59.60	2.55	3.49	4.45	5.31						
	15		C.	32.45	33.37	34.31	35.29	36.29						
	16	ξ Navis - - - - -	D.	55.49	58.48	59.44	0.48	1.39	43 59.01	—24.62	5.24	7 43 29.14	4.66	
	17		E.	20.50	21.43	24.43	25.41	26.37						
	18		B.	34.59	35.56	36.53	37.48	40.71						
	19	✡ (8) —29° 58′ - -	C.	0.88	1.90	2.90	3.89	4.91	51 2.91	0.00	5.24	7 50 57.67	4.53	
	20		D.	25.06	28.28	29.31	30.29	31.31						
	21		B.	47.05	47.88	48.87	49.89	52.88						
	22	B. A. C., 2655 - - -	C.	13.02	13.95	15.05	16.05	17.07	52 15.12	0.00	5.24	7 52 9.89	4.56	
	23		D.	37.29	40.52	41.48	42.46	43.40						
	24		B.	45.30	46.26	47.28	48.28	51.17						
	†25	B. A. C., 2703 - - -	C.	10.28	11.21	12.19	13.25	14.21	58 12.06	+ 0.05	5.23	7 58 6.87	6.38	
	26		D.	32.71	35.65	36.75	37.65	38.67						
	27		A.	53.25	54.18	55.19	58.05	59.08						
	28		B.	17.90	18.91	20.09	21.00	23.86						
	29	15 Argus - - - - -	C.	43.28	44.15	45.10	46.08	47.08	1 44.99	0.05	5.23	8 1 39.80	4.79	
	30		D.	5.92	8.91	9.93	11.08	12.08						
	31		E.	31.04	31.95	34.58	35.53	36.50						
	32		B.	55.74	56.75	57.78	58.75	1.85						
	33	B. A. C., 2788 - - -	C.	20.32	21.34	22.21	23.21	24.21	12 22.24	0.05	5.22	8 12 17.06	6.38	
	34		D.	42.75	45.71	46.68	47.68	48.65						
	35		B	44.31	45.33	46.31	47.23	50.29						
	†36	B. A. C., 2827 - - -	C.	9.35	10.36	11.28	12.20	13.21	19 11.27	0.01	5.22	8 19 6.07	4.93	
	37		D.	32.36	35.30	36.21	37.21	38.20						
	38		B.	21.51	22.55	23.47	24.40	27.37						
	39	η Cancri - - - - -	C.	46.15	47.07	48.08	48.95	49.90	24 47.97	0.05	5.22	8 24 42.80	6.37	
	40		D.	8.52	11.48	12.43	13.39	14.27						
	41		A.	3.84	4.82	5.79	8.59	9.75						
	42		B.	28.59	29.50	30.42	31.41	34.39						
9	43	δ Geminorum - - -	C.	53.22	54.22	55.15	56.10	56.98	11 55.07	+ 0.02	3.32	7 11 51.77	6.17	
	44		D.	15.80	18.88	19.81	20.70	21.58						
	45		E.	40.36	41.32	44.28	45.25	46.12						
	46		B.	28.81	29.72	30.68	31.66	34.21						
	47	Weisse VII, 551 - -	C.	52.05	53.07	53.92	54.89	55.91	18 53.90	0.00	3.33	7 18 50.57	5.72	
	48		D.	13.35	16.20	17.11	18.03	18.95						
	49		A.	53.89	54.82	55.70	58.90	0.09						
	50		B.	20.90	21.90	22.95	24.08	27.03						
	51	α^2 Geminorum - - -	C.	47.75	48.72	49.78	50.83	51.89	25 49.74	0.00	— 3.35	7 25 46.39	— 6.72	
	52		D.	12.73	15.89	16.86	17.81	18.78						
	53		E.	39.28	40.30	43.60	44.53	45.54						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
Mar. 7, 7.6	— 5.25	+ 0.043	+ 0.070	+ 0.040	— 0.036

5. Preceded by a smaller star.
25. Bad observation.
36. 1st and larger.

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DATE.	Number.	OBJECT.	Set	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	s.	s.	h. m. s.	s.	
	1		B.	44.65	45.69	46.67	47.61	50.13						
Mar. 9	†2	* +13° 34′ - - -	C.	8.15	9.17	10.10	11.00	11.95	34 10.07	0.00	— 3.36	7 34 6.70	— 5.98	R.
	3		D	29.73	32.61	33.60	34.53	35.41						
	4		B.	50.11	51.04	51.95	52.89	55.80						
	5	B. A. C., 2599 - - -	C.	15.10	16.21	17.21	18.24	19.11	43 4.87	+12.38	3.38	7 43 13.87	4.63	
	6		B.	5.41	6.38	7.30	8.40	11.31						
	7	ξ Navis - - - - - -	C.	30.34	31.30	32.31	33.31	34.28	43 32.39	0.05	3.38	7 43 29.06	4.63	
	8		D.	53.45	56.60	57.51	58.49	59.43						
	9	λ Ursæ Minoris, S. P. - -	C	6.00	21.00	37.00	50.00	4.00	1 35.60	- -	- -	- - - -	- - -	
	10		B.	16.70	17.52	18.42	19.30	22.08						
	11	Weisse, 415 - - -	C.	39.84	40.77	41.70	42.60	43.59	16 41.80	0.00	3.43	8 16 38.37	6.06	
	12		D.	1.57	4.22	5.29	6.27	7.19						
	13		A.	55.48	56.50	57.50	0.51	1.45						
	14		B.	19.88	20.82	21.69	22.68	25.71						
	15	η Cancri - - - - - -	C.	44.32	45.32	46.31	47.35	48.29	24 46.26	0.02	3.44	8 24 42.83	6.35	
	16		D.	6.91	9.61	10.58	11.60	12.55						
	17		E.	31.31	32.27	34.91	35.83	36.91						
	18		B.	3.00	4.08	5.10	6.12	9.48						
	19	B. A. C., 2883 - - -	C.	29.81	30.82	31.76	32.85	33.84	27 31.75	0.06	3.45	8 27 28.37	4.71	
	20		D.	54.25	57.30	58.31	59.29	0.30						
	21		A.	42.87	43.85	44.80	47.47	48.52						
	22		B.	6.05	7.07	7.97	8.90	11.43						
	23	ε Hydræ - - - - - -	C.	29.21	30.25	30.94	31.85	32.74	39 30.85	+ 0.04	3.47	8 39 27.42	5.86	
	24		D.	50.09	53.05	53.93	54.84	55.74						
	25		E.	13.03	14.04	16.61	17.55	18.43						
	26		B.	4.30	5.22	6.21	7.13	9.95						
	27	B. A. C., 2997 - - -	C.	27.97	28.96	29.90	30.90	31.80	43 29.97	— 0.01	3.48	8 43 26.48	6.22	
	28		D.	49.81	52.95	53.90	54.80	55.71						
	29		B	37.92	38.90	39.81	40.61	43.36						
	30	B. A. C., 3031 - - -	C.	1.27	2.22	3.23	4.22	5.17	48 3.25	0.00	3.48	8 47 59.76	6.19	
	31		D.	23.18	25.76	26.79	27.70	28.63						
	32		B.	48.31	49.24	50.25	51.30	54.28						
	33	B. A. C., 3082 - - -	C.	13.64	14.61	15.61	16.62	17.54	55 15.59	+ 0.05	3.50	8 55 12.15	5.01	
	34		D.	36.92	39.91	40.90	41.90	42.90						
	35		B.	35.75	36.69	37.61	38.61	41.69						
	36	B. A. C., 3121 - - -	C.	0.74	1.88	2.80	3.71	4.71	2 2.80	+ 0.05	3.51	9 1 59.35	5.09	
	37		D.	23.90	26.94	28.06	28.92	30.07						
	38		C.	38 27	39.32	40.28	41.22	42.17						
	39	✡ (7.8) —25° 15′ - -	D.	1.39	4.46	5.39	6.39	7.35	3 4.99	—24.72	3.51	9 2 36.76	5.11	
	40		E.	26.61	27.62	30.50	31.42	32.33						
	41		A.	29.47	30.42	31.48	34.18	35.18						
	42		B.	53.59	54.53	55.58	56.50	59.36						
	43	83 Cancri - - - - - -	C.	17.63	18.59	19.61	20.53	21.45	11 19.50	+ 0.02	3.52	9 11 16.00	6.31	
	44		D.	39.80	42.52	43.51	44.50	45.50						
	45		E.	3.70	4.61	7.48	8.41	9.30						
	46		A.	10.06	10.85	11.72	14.40	15.37						
	47		B.	32.80	33.62	34.57	35.50	38.30						
11	48	δ Orionis - - - - - -	C.	55.65	56.60	57.48	58.38	59.20	24 57.39	+ 0.07	— 1.52	5.24 55.94	— 4.68	Y.
	49		D.	16.53	19.38	20.32	21.17	22.03						
	50		E.	39.47	40.30	42.80	43.63	44.63						

2. Observed for Weisse, 1053; probably Weisse, 1035.

March 9. Azimuth cor. from λ Ursæ Minoris and η Cancri.

March 9. Image $\overset{r.}{0.00}$. Clp. west.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate	m.	n.	c.
h.	s.	s	s.	s.	s.
Mar. 9, 8.2	— 3.42	— 0.100	+ 0.055	— 0.081	— 0.036

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s	s.	s.	s	s.	m. s.	s.	s.	h. m. s.	s.	
	1		A.	25.38	26.24	27.06	29.80	30.79						
	2		B	48.29	49.16	49.93	50.90	53.44						
Mar. 11	3	ε Orionis - - - - - -	C.	11.06	11.91	12.82	13.70	14.53	29 12.78	+ 0.07	— 1.52	5 29 11.34	— 4.67	Y.
	4		D.	31.90	34.69	35.71	36.55	37.41						
	5		E.	54.82	55.72	58.49	59.22	0.06						
	6		A.	42.43	43.46	44.50	47.70	48.94						
	7		B.	10.07	11.17	12.29	13.32	16.54						
	8	α Columbæ - - - - -	C.	37.51	38.62	39.70	40.62	41.69	34 39.66	0.04	1.51	5 34 38.19	3.42	
	9		D.	2.83	6.22	7.30	8.34	9.37						
	10		E.	30.32	31.44	34.69	35.64	36.71						
	11		B	17.15	18.11	19.12	20.04	22.90						
	12	B. A. C., 1939 - - -	C.	41.42	42.38	43.27	44.14	45.14	55 43.33	0.05	1.51	5 55 41.88	— 5.62	
	13		D.	3.73	6.77	7.63	8.60	9.50						
	14	δ Ursæ Minoris, S. P. -	C.	28.00	11.00	57.00	41.00	26.00	16 56.60	0.00	1.46	18 16 55.14	+ 34.75	
	15		B.	4.21	5.91	7.87	9.72	15.10						
	16	○ (8) +61° 8′ - - -	C.	50.95	53.12	54.88	56.66	58.50	25 54.89	0.08	1.45	6 25 53.52	— 9.12	
	17		D.	34.60	40.31	42.11	43.89	45.52						
	18	51 (Hev.) Cephei - - -	C.	59.00	17.00	32.00	53.00	12.00	34 34.60	0.18	1.44	6 34 33.34	55.34	
	19		B	5.35	6.23	7.19	8.11	10.86						
	20	Weisse, 1351 - - -	C.	28.90	29.75	30.66	31.60	32.42	44 30.69	0.03	1.42	6 44 29.29	4.60	
	21		D.	50.49	53.30	54.28	55.16	56.00						
	22		A.	18.79	19.77	20.80	23.80	25.03						
	23		B.	44.94	45.90	47.10	48 00	51.11						
	24	ε Canis Majoris - - -	C.	10.91	12.04	12.91	14.01	14.89	53 12.97	0.05	1.41	6 53 11.60	4.11	
	25		D.	34.80	37.95	39.11	40.10	41.09						
	26		E.	0.81	1.86	4.88	5.80	6.79						
	27		B.	33.31	34.24	35.23	36.16	39.13						
	28	B. A. C., 2313 - - -	C.	58.06	59.00	59.84	0.81	1.85	56 59.88	0.06	1.41	6 56 58.53	6.09	
	29		D.	20.60	23.52	24.51	25.49	26.49						
	30	B. Z., 492,7 - - -	B	39.65	40.91	42.25	43.44	46.83	5 57.77	+15.18	1.40	7 6 11.55	7.25	
	31		C.	10.63	11.78	12.77	14.12	15.32						
	32	Weisse, 320 - - -	D.	36.58	39.29	40.15	41.11	41.95	11 51.25	—34.31	1.39	7 11 15.54	5.70	
	33		E.	59.80	0.66	3.43	4.33	5.20						
	34		B.	9.84	10.82	11.72	12.61	15.42						
	35	Weisse, 387 - - -	C.	33.10	34.14	35.10	35.89	36.88	13 35.05	+ 0.05	1.39	7 13 33.72	— 5.75	
	36		D.	54.66	57.47	58.47	59.41	0.29						
	37	λ Ursæ Minoris, S. P. -	C.	12.00	26.00	42.00	54.00	10.00	1 40.80	— 0.18	1.33	20 1 39.29	+ 134.23	
	38		B.	33.00	43.50	55.00	7.00	42.00						
	39	B. A. C., 2787 - - -	C.	27.00	37.00	47.00	59.00	10.00	14 47.93	+ 0.17	1.31	8 14 46.79	— 39.14	
	40		D.	53.00	29.00	41.50	52.00	3.00						
	41		A.	53.23	54.20	55.12	58.10	59.10						
	42		B.	17.78	18.62	19.53	20.50	23.48						
	43	η Cancri - - - - - -	C.	42.06	43.09	43.91	45.00	45.87	24 43.96	0.09	1.30	8 24 42.75	6.32	
	44		D.	4.42	7.40	8.42	9.32	10.25						
	45		E	28.92	29.78	32.69	33.75	34.55						
	46	G. C., 773 - - - -	C.	53.10	59.18	4 60	9.87	15.60	35 4.47	0.10	1.29	8 35 3.29	20.82	
	47		A.	40.81	41.70	42.67	45.41	46.37						
	48		B.	3.85	4.73	5.71	6.65	9.34						
	49	ε Hydræ - - - - - -	C.	26.79	27.69	28.62	29.50	30.40	39 28.62	+ 0.08	— 1.28	8 39 27.41	— 5.83	
	50		D.	47.99	50.81	51.69	52.59	53.39						
	51		E.	10.84	11.80	14.50	15.35	16.23						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
Mar. 11, 7.0	— 1.41	+ 0.074	+ 0.078	+ 0.043	— 0.036

March 11. Azimuth correction from δ Ursæ Minoris, S. P., and 51 (Hev.) Cephei.

March 11. Image west *r.* 0 12. Clp. west. Mercury unsteady.

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Date.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	s.	s.	h. m. s.	s.	
Mar. 11	†1	ι Ursæ Majoris	B.	8.44	9.71	11.29	12.47	16.57	49 45.61	+ 0.07	— 1.27	8 49 44.41	— 8.01	Y.
	†2		D.	14.67	18.72	20.10	21.47	22.67						
	3		B.	45.04	46.31	47.69	49.11	53.31						
16	4	α Persei	C.	19.88	21.24	22.58	23.94	25.32	14 22.65	- -	- -	- - - -	- - -	
	5		D.	52.10	56.24	57.61	59.04	0.32						
	6		B.	43.89	44.87	45.90	46.89	49.84						
	†7	Moon's 1st Limb	C.	9.12	10.10	11.16	12.10	13.06	21 11.13	0.06	+ 3.07	3 21 14.26	- - -	
	8		D.	32.38	35.39	36.41	37.41	38.39						
	9		A.	26.57	27.50	28.42	31.38	32.38						
	10		B.	51.25	52.10	53.12	54.07	56.82						
19	11	ζ Tauri	C.	15.45	16.31	17.25	18.28	19.29	29 17.37	0.09	4.66	5 29 22.12	5.34	R.
	12		D.	37.92	40.78	41.72	42.72	43.80						
	13		E.	2.48	3.42	5.97	7.10	8.09						
	14		A.	47.80	48.78	49.70	52.53	53.45						
	15		B.	11.20	12.08	12.97	13.92	16.44						
	16	α Orionis	C.	34.19	35.14	35.89	36.78	37.60	47 35.83	0.09	4.65	5 47 40.57	4.94	
	17		D.	55.20	57.91	58.90	59.81	0.77						
	18		E.	18.20	19.11	21.60	22.50	23.44						
	19		A.	35.15	36.00	36.90	39.90	41.10						
	20		B.	59.71	0.52	1.59	2.58	5.82						
	21	η Geminorum	C.	24.43	25.68	26.48	27.47	28.40	6 26.61	0.09	4.64	6 6 31.34	5.63	
	22		D.	47.10	50.31	51.30	52.30	53.20						
	23		E	11.82	12.80	15.68	16.60	17.49						
	24		B.	13.89	15.09	16.04	16.97	20.14						
	25	Moon's 1st Limb	C.	39.40	40.32	41.32	42.26	43.37	8 41.28	0.06	4.64	6 8 45.98	- - -	
	26		D.	2.32	5.52	6.57	7.55	8.43						
	27		A.	38.90	40.07	41.05	43.79	44.89						
	28		B	3.71	4.67	5.70	6.61	9.65						
	29	μ Geminorum	C.	28.40	29.42	30.41	31.37	32.28	14 30.30	0.09	4.63	6 14 35.03	5.70	
	30		D.	51.07	53.90	54.92	55.88	57.05						
	31		E.	15.60	16.79	19.41	20.56	21.48						
	32		B	54.00	11.00	31.00	50.00	43.00						
	33	51 (Hev.) Cephei	C.	49.00	6.00	26.00	45.00	4.00	34 26.13	- -	- -	- - - -	- - -	
	34		D.	8.00	3.00	22.00	41.00	59.00						
	35		A.	12.55	13.60	14.60	17.62	18.84						
	36		B	38.82	39.80	40.74	41.80	45.11						
	37	ε Canis Majoris	C.	4.63	5.71	6.71	7.80	8.77	53 6.71	0.08	4.61	6 53 11.40	3.94	
	38		D.	28.63	31.82	32.76	33.67	34.72						
	39		E.	54.59	55.61	58.58	59.60	0.65						
	40		B.	11.30	12.29	13.25	14.30	17.52						
	41	B. A. C., 2371	C.	37.62	38.70	39.65	40.69	41.70	6 39.76	+ 0.04	4.61	7 6 44.41	3.91	
	42		D.	1.77	5.35	6.41	7.36	8.48						
	43		C.	22.24	23.27	24.28	25.22	26.25						
	44	B. A. C., 2383	D.	45.50	48.73	49.61	50.72	51.69	8 49.31	—25.07	4.61	7 8 28.84	6.16	
	45		E.	11.30	12.24	15.20	16.20	17.15						
	46		B.	39.07	40.19	41.25	42.21	45.24						
	47	B. A. C., 2420	C.	5.62	6.63	7.68	8.61	9.63	13 7.68	+ 0.04	4.60	7 13 12.33	4.00	
	48		D.	29.93	33.22	34.30	35.31	36.35						
	49		B.	44.31	45.27	46.25	47.22	50.55						
	50	B. A. C., 2453	C.	10.35	11.42	12.41	13.41	14.42	18 12.56	+ 0.04	+ 4.60	7 18 17.21	— 4.05	
	51		D.	34.82	38.15	39.07	39.92	40.91						

1.2. Interrupted by a stoppage of gas.
7. Cloudy.

March 16. 3h. 5m. Image west 0.12 r. Clp. west.
March 19. Azimuth correction from 51 (Hev.) Cephei and ε Canis Majoris.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m.	n.	c.
h.	s.	s.	s.	s.	s.
Mar. 16 -	- -	- -	+ 0.078	+ 0.043	— 0.036
19, 6.7	+ 4.62	— 0.033	+ 0.091	+ 0.015	— 0.036

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DATE	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s	m. s.	m. s.	s.	h. m. s.	s.	
	1		B.	21.10	21.91	22.88	23.81	26.58						
Mar. 19	†2	✡ (8.9) —11° 17′ - -	C.	44.12	45.12	45.96	46.93	47.90	20 46.04	+ 0.05	+ 4.60	7 20 50.69	— 4.78	R
	3		D.	5.32	8.31	9.29	10.22	11.21						
	4		D.	36.38	39.24	40.28	41.24	42.25						
	5	B. A. C., 2470 - - -	E.	59.48	0.46	3.24	4.25	5.22	21 51.20	— 34.30	4.60	7 21 21.51	4.81	
	6		A.	11.44	12.37	13.40	15.84	16.85						
	7		B.	34.31	35.30	36:25	37.21	39.67						
	8	α Canis Minoris - - -	C.	57.21	58.17	59.05	59.92	0.82	31 59.06	+ 0.09	4.59	7 32 3.74	5.37	
	9		D.	18.29	21.11	21.94	22.90	23.91						
	10		E.	41.22	42.20	44.82	45.70	46.64						
	11		B	57.09	58.17	59.21	0.18	3.12						
	†12	ξ Navis - - - - - -	C.	22.20	23.28	24.20	25.26	26.28	43 24.24	0.04	4.59	7 43 2 .87	4.44	
	13		D.	45.42	48.31	49.29	50.30	51.30						
	14		B	36.78	37.68	38.66	39.69	42.78						
	†15	B. A. C., 2655 - - -	C.	3.00	4.11	5.12	6.11	7.10	52 5.10	0.04	4.58	7 52 9.72	4.33	
	16		D.	27.19	30.27	31.38	32.33	33.33						
	17		B.	35.22	36.20	37.17	38.14	40.76						
	18	B. A. C., 2703 - - -	C	59.95	0.94	1.92	2.91	3 85	58 1.94	0.06	4.58	7 58 6.58	6.20	
	19		D.	23.13	25.80	26.72	27.76	28.68						
	20		A.	43.11	44.02	45.06	47.75	48.79						
	21		B.	8.22	9.07	10.09	10.97	13.89						
	22	15 Argus - - - - - -	C.	33.09	34.01	34.91	35.91	36.91	1 34.87	0.08	4.58	8 1 39.53	4.59	
	23		D.	55.53	58.90	59.80	0.81	1.72						
	24		E	20.88	21.78	24.61	25.50	26.50						
	25		A	35.90	36.89	37.90	40.77	41.90						
	26		B	0.74	1.78	2.80	3.64	6.64						
22	†27	μ Geminorum - - -	C.	25.48	26.41	27.38	28.32	29.25	14 27.33	+ 0.08	7.62	6 14 35.04	— 5.65	Y.
	28		D.	48.13	51.09	52.09	53.04	53.91						
	29		E.	12.71	13.75	16.69	17.58	18.47						
	30	δ Ursæ Minoris, S. P. -	D.	46.50	31.50	15.50	0.50	15.50	23 9.90	—6 18.59	7.62	18 16 59.94	+ 30.93	
	31		A.	45.72	46.71	47.63	50.37	51.30						
	32		B	9.53	10.49	11.47	12.37	15.17						
	33	γ Geminorum - - -	C.	33.39	34.32	35.19	36.16	37.00	29 35.16	+ 0.07	7.63	6 29 42.86	— 5.48	
	34		D.	55.24	58.10	59.01	59.92	0.84						
	35		E.	18.73	19.73	22.52	23.50	24.50						
	36	51 (Hev.) Cephei - - -	C	42.50	2.00	19.50	39.00	57.50	34 20.10	1.05	7.63	6 34 28.78	50.80	
	37		A.	9.63	10.73	11.71	14.80	15.88						
	38		B	35.80	36.81	37.78	38.85	41.91						
	39	ε Canis Majoris - - -	C.	1.83	2.88	3.80	4.82	5.81	53 3.77	0.00	7.64	6 53 11.41	3.89	
	40		D	25.69	28.80	29.81	30.84	31.80						
	41		E.	51.74	52.68	55.75	56.67	57.55						
	42		A.	33.00	33.99	34.90	37.59	38.70						
	43		B.	56.85	57.74	58.68	59.61	2.41						
	44	γ Canis Majoris - - -	C	20.42	21.42	22.37	23.37	24.26	57 22.32	0.02	7.64	6 57 29.99	4.46	
	45		D.	42.25	45.19	46.17	47.03	47.93						
	46		E.	5.87	6.79	9.60	10.48	11.43						
	47		B.	48.22	49.59	50.96	52.58	56.90						
	48	B. A. C., 2341 - - -	C.	24.88	26.41	27.78	29.31	30.74	2 27.79	0.10	7.64	7 2 35.54	7.82	
	49		D.	58.69	3.05	4.62	5.92	7.28						
	50		B.	30.08	30.91	31.76	32.72	35.48						
	†51	Weisse, 368 - - -	C	53.16	54.10	55.05	55.98	57.03	12 55.07	+ 0.03	+ 7.65	7 13 2.75	— 5.55	
	52		D.	14.80	17.50	18.42	19.39	20.27						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
Mar. 19, 6.7	+ 4.62	— 0.033	+ 0.091	+ 0.015	— 0.036

2. Star in the field preceding this and larger.
12. Two smaller stars before.
15. Smaller star preceding.
27. Good observation.
51. Preceded by a star of (9.10.) Same dec.

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s	m. s.	s.	s.	h. m. s.	s.	
	1		B.	14.88	15.83	16.78	17.72	20.48						
Mar. 22	2	✡ (8.9) —14° 27′ - -	C.	38.49	39.40	40.35	41.22	42.11	17 40.29	− 0.01	+ 7.65	7 17 47.93	− 4.61	Y.
	3		D.	0.12	2.85	3.79	4.79	5.58						
	4		C.	31.20	32.15	32.97	33.90	34.84						
	5	✡ (8.9) +15° 37′ - -	D.	52.97	55.83	56.78	57.73	58.65	20 56.33	−23.22	7.65	7 20 40.76	5.71	
	6		E.	16.70	17.62	20.22	21.23	22.18						
	7	B. Z ,276,245, +15° 35′	B.	11.10	12.09	13.10	14.04	16.73	23 25.06	+11.68	7.65	7 23 44.38	5.73	
	8		C.	34.90	35.79	36.70	37.62	38.50						
	9	B. Z.,276,244, +15° 37′	D.	56.37	59.26	0.09	0.97	1.83	24 11.28	−34.86	7.65	7 23 44.07	5.73	
	10		E.	19.91	20.85	23.60	24.48	25.41						
	11		B.	57.00	57.87	58.81	59.78	2.40						
	12	α Clio, (8.9) +10° 26′ -	C.	19.92	20.91	21.87	22.81	23.68	33 21.94	+ 0.03	7.65	7 33 29.62	5.57	
	13		D.	41.40	44.22	45.27	46.11	46.99						
	14		B	33.41	34.30	35.31	36.28	39.23						
	15	B. A. C., 2544 - - -	C.	58.14	59.04	59.94	0.90	1.80	34 60.00	+ 0.05	7.65	7 35 7.70	6.07	
	16		D.	20.82	23.80	24.73	25.63	26.62						
	17		C.	25.10	26.21	27.19	28.27	29.35						
	18	π Geminorum - - -	D.	50.37	53.73	54.84	55.85	56.81	38 54.23	−26.88	7.66	7 38 35.01	− 6.65	
	19		E.	17.73	18.89	22.09	22.99	24.11						
	20	λ Ursæ Minoris, S. P. -	C.	12.00	26.00	42.00	53.50	10.00	1 40.70	− 2.43	7.66	20 1 45.94	+ 124.20	
	21		B	21.00	31.00	43.00	45.00	30.00						
	22	B. A. C , 2787 - - -	C.	13.00	25.00	35.50	47.50	58.50	14 35.50	+ 0.69	7.67	8 14 43.86	− 36.78	
	23		D.	42.00	18.00	30.00	41.00	52.00						
	24		A.	44.05	45.08	45.86	48.97	49.95						
	25		B.	8.59	9.50	10.50	11.37	14.30						
	26	η Cancri - - - - -	C.	33.14	34.05	34.90	35.82	36.76	24 34.87	0.08	7.67	8 24 42.62	6.18	
	27		D.	55.42	58.39	59.40	0.32	1.25						
	28		E.	19.72	20.78	23.70	24.56	25.43						
	29	39 Cancri - - - - -	B.	35.14	36.09	37.12	38.07	41.00	32 1.40	0.05	7.68	8 32 9.12	6.19	
	30		D.	21.85	24.80	25.66	26.70	27.54						
	31		A.	15.78	16.80	17.70	20.67	21.69						
	32	40 Cancri - - - - -	C.	4.62	5.66	6.61	7.48	8.36	32 6.44	0.05	7.68	8 32 14.16	6.18	
	33		E.	51.22	52.16	55.07	55.88	56.86						
	34		A.	51.70	52.64	53.56	56.44	57.50						
	35		B.	15.86	16.78	17.80	18.78	21.66						
	36	δ Cancri - - - - -	C.	39.82	40.89	41.78	42.72	43.68	36 41.77	0.08	7.68	8 36 49.52	6.13	
	37		D.	1.91	5.02	5.89	6.90	7.77						
	38		E.	25.94	26.94	29.86	30.80	31.62						
	39		B	22.67	23.60	24.41	25.38	28.19						
	40	α Cancri - - - - -	C.	45.91	46.80	47.82	48.73	49.60	50 47.80	0.03	7.68	8 50 55.52	5.95	
	41		D.	7.41	10.20	11.21	12.14	12.91						
	42		B.	42.67	43.61	44.57	45.42	48.17						
	43	κ Cancri - - - - -	C.	5.93	6.85	7.79	8.73	9.65	0 7.80	+ 0.03	7.69	9 0 15.52	5.94	
	44		D.	27.39	30.21	31.15	32.05	32.85						
	45	Moon's 1st Limb - -	D.	0.34	3.18	4.00	4.85	5.71	2 15.45	−35.56	7.69	9 1 47.58	- - -	
	46		E.	24.46	25.25	28.08	28.89	29.73						
	47		A.	18.05	18.97	20.03	22.92	23.92						
	48		B.	42.27	43.19	44.10	45.06	47.89						
	49	83 Cancri - - - - -	C.	6.17	7.13	8.05	9.10	9.96	11 8.10	+ 0.08	+ 7.69	9 11 15.87	− 6.19	
	50		D.	28.42	31.30	32.27	33.19	33.90						
	51		E.	52.34	53.22	56.14	57.03	57.87						

March 22. Azimuth cor. from δ Ursæ Minoris, S. P., and 51 (Hev.) Cephei.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m.	n.	c.
h.	s.	s.	s.	s.	s.
Mar. 22, 7.6	+ 7.66	+ 0.023	+ 0.053	+ 0.086	− 0.036

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	s.	s.	h. m. s.	s.	
	1		A.	52.11	53.10	54.05	56.80	57.73						
	2		B	15.28	16.24	17.13	18.06	20.70						
Mar 22	3	α Hydræ - - - - - -	C.	38.21	39.22	40.19	41.13	42.01	20 40.13	+ 0.03	+ 7.69	9 20 47.86	— 5.47	Y.
	4		D	59.59	2.38	3.27	4.16	5.04						
	5		E.	22.47	23.37	26.10	26.94	27.89						
	6		A.	37.11	37.94	38.86	41.58	42.55						
	7		B.	0.21	1.09	2.08	2.88	5.78						
	8	h Leonis - - - - - -	C.	23.54	24.46	25.29	26.17	26.99	24 25.23	0.06	7.69	9 24 32.99	5.98	
	9		D.	44.81	47.55	48.43	49.41	50.17						
	10		E.	7.89	8.76	11.55	12.41	13.31						
	11		A.	50.40	51.33	52.19	54.95	55.90						
	12		B.	13.69	14.57	15.52	16.41	19.19						
	13	o Leonis - - - - - -	C.	36.90	37.80	38.70	39.53	40.38	33 38.62	0.07	7.70	9 33 46.39	5.99	
	14		D.	58.18	0.95	1.91	2.72	3.62						
	15		E.	21.20	22.20	24.89	25.75	26.66						
	16		A.	18.45	19.42	20.27	23.07	23.92						
25	17	e Leonis - - - - - -	B.	41.30	42.11	42.91	43.80	46.65	22 43.41	- -	- -	- - - -	- - -	
	18		C.	4.14	5.01	5.81	6.77	7.58						
	19		A.	49.25	50.22	51.12	53.78	54.68						
	20		B.	12.44	13.55	14.51	15.48	18.30						
	†21	Moon's 1st Limb - -	C.	36.18	37.19	38.01	38.90	39.83	50 37.91	+ 0.05	9.74	11 50 47.71	- - -	
	22		D.	57.51	0.53	1.40	2.38	3.18						
	23		E.	21.05	21.83	24.64	25.49	26.39						
	24		A.	53.76	54.75	55.61	58.29	59.24						
	25		B.	16.60	17.51	18.51	19.37	22.07						
27	26	v Leonis - - - - - -	C.	39.42	40.36	41.25	42.17	43.04	29 41.23	— 0.07	11.68	11 29 52.85	5.97	
	27		D.	0.47	3.23	4.14	5.04	5.85						
	28		E.	23.18	24.15	26.71	27.58	28.41						
	29		C.	44.89	45.88	46.89	47.89	48.86						
	30	B. Z., 500, 130 - - -	D.	8.47	11.50	12.53	13.50	14.51	33 12.03	25.17	11.68	11 32 58.55	6.37	
	31		E.	33.82	34.90	38.00	38.94	39.91						
	32		B	26.95	27.88	28.82	29.76	32.71						
	33	Weisse, 641 - - -	C.	50.61	51.63	52.44	53.39	54.29	36 52.46	0.13	11.68	11 37 4.01	5.91	
	34		D.	12.29	15.19	16.12	16.95	17.82						
	35	β Leonis - - - - - -	D.	9.30	12.18	13.18	14.08	14.91	42 24.20	34.91	11.68	11 42 0.97	6.10	
	36		E	32.90	33.82	36.71	37.54	38.40						
	37		C.	46.84	48.09	49.14	50.30	51.40						
	38	B. A. C., 4010 - - -	D.	13.77	17.34	18.41	19.54	20.62	45 17.92	—28.73	11.68	11 45 0.88	7.06	
	39		E.	43.07	44.26	47.52	48.71	49.84						
	40	B. A. C., 4050 - - -	C.	45.21	52.09	57.30	4.12	10.18	52 57.78	+ 0.55	11.68	11 53 10.01	15.32	
	41	B. A. C., 4070 - - -	C.	24.00	39.00	53.00	7.00	21.00	57 52.80	+ 1.35	11.68	11 58 5.83	28.43	
	42		A.	51.60	52.63	53.42	56.13	57.17						
	43		B.	14.49	15.38	16.20	17.11	19.86						
	44													
	45	η Virginis - - - -	C.	37.35	38.23	39.10	40.05	40.80	12 39.05	— 0.07	11.68	12 12 50.67	6.03	
	46		D.	58.19	1.06	1.88	2.74	3.60						
			E.	21.06	21.84	24.64	25.48	26.35						
	47		C.	56.73	57.69	58.60	59.57	0.45						
	†48	Weisse, 390 - - -	D	17.90	20.66	21.50	22.43	23.27	24 21.13	22.68	11.68	12 24 10.13	6.03	
	49		E.	40.79	41.62	44.40	45.26	46.09						
	50		B.	37.24	38.15	39.09	39.91	42.59						
	51	Weisse, 494 - - -	C.	0.07	1.05	1.89	2.82	3.70	30 1.98	— 0.11	+11.68	12 30 13.54	— 6.10	
	52		D.	21.30	24.17	25.06	25.92	26.75						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m.	n.	c.
h.	s	s.	s.	s.	s.
Mar. 25, 0.0	- -	+ 0.05[illegible]	+ 0.053	+ 0.08[illegible]	— 0.036

21. Dim; through clouds.
48. Dim. r.
March 25. 12h. Image west 0.09. Clp. west.

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s	m. s.	s.	s.	h. m. s.	s.	
	1		B.	53.42	54.30	55.18	56.09	58.70						
Mar. 27	2	Weisse, 564 - - -	C.	16.05	17.08	17.90	18.80	19.64	34 17.93	— 0.09	+11.68	12 34 29.52	— 6.02	Y.
	3		D.	37.16	39.81	40.75	41.61	42.50						
	4		B.	3.63	4.62	5.58	6.43	9.22						
	5	Weisse, 665 - - -	C.	27.21	28.19	29.00	29.93	30.82	39 29.01	0.07	11.68	12 39 40.62	6.03	
	6		D.	48.70	51.61	52.51	53.41	54.30						
	7		B.	45.78	46.80	47.78	48.70	51.58						
	8	B. Z., 361, 41 - - -	C.	10.07	10.97	11.81	12.74	13.66	43 11.78	0.06	11.68	12 43 23.40	6.03	
	9		D.	31.89	34.91	35.79	36.69	37.55						
	10	Polaris, S. P. - - -	D.	- -	34.00	45.00	10.00	34.00	52 45.75	- -	- -	- - - - -	- - -	
	11		A.	55.65	56.64	57.48	0.07	1.19						
	12		B.	18.87	19.72	20.70	21.62	24.41						
	13	α Virginis - - - -	C.	41.99	42.98	43.89	44.79	45.62	17 43.83	0.09	11.67	13 17 55.41	6.10	
	14		D.	3.26	6.05	7.03	7.88	8.82						
	15		E.	26.57	27.51	30.21	31.04	31.84						
	16		A.	42.18	43.17	44.08	46.81	47.81						
	17		B.	5.54	6.34	7.28	8.18	11.09						
	18	h Virginis - - - -	C.	28.57	29.56	30.52	31.33	32.22	25 30.38	0.09	11.67	13 25 41.96	6.09	
	19		D.	49.89	52.67	53.53	54.43	55.32						
	20		E.	13.05	13.81	16.51	17.37	18.22						
	21		B.	2.77	3.61	4.52	5.35	8.15						
	22	Weisse, 512 - - -	C.	25.56	26.51	27.30	28.21	29.07	30 27.33	0.10	11.67	13 30 38.89	6.01	
	23		D.	46.52	49.28	50.17	51.06	51.82						
	24		B.	2.05	2.86	3.90	4.69	7.54						
	25	B. A. C, 4560 - - -	C.	25.27	26.21	26.97	27.92	28.80	33 27.08	0.13	11.67	13 33 38.62	6.14	
	26		D.	46.65	49.41	50.37	51.30	52.21						
	27		C.	21.71	22.71	23.55	24.50	25.40						
	28	86 Virginis - - - -	D.	43.13	45.87	46.79	47.69	48.53	38 46.39	23.01	11.67	13 38 35.05	6.13	
	29		E.	6.31	7.20	9.90	10.84	11.67						
	30		B.	45.18	46.09	46.93	47.85	50.78						
	31	89 Virginis - - - -	C.	9.03	9.95	10.23	11.78	12.72	42 10.90	— 0.14	11.67	13 42 22.43	6.23	
	32		D.	31.11	33.98	34.88	35.83	36.63						
	†33		A.	4.90	5.91	6.83	9.75	10.67						
	†34	η Bootis - - - - -	B.	29.20	30.19	31.15	32.09	34.83	47 19.55	+35.59	11.67	13 48 6.81	5.77	
	35		A.	3.41	4.41	5.33	8.13	9.09						
	36		B.	28.10	29.04	30.05	30.95	33.80						
	37	Moon's 2d Limb - -	C.	52.64	53.49	54.42	55.41	56.35	51 54.48	— 0.11	11.67	13 52 6.04	- - -	
	38		D.	15.12	18.15	19.11	20.06	20.92						
	39		E.	39.82	40.77	43.58	44.48	45.39						
	40		C.	23.88	24.84	25.71	26.50	27.44						
	41	τ Virginis - - - -	D.	44.87	47.67	48.50	49.48	50.30	54 48.11	22.51	11.67	13 54 37.26	5.92	
	42		E.	7.70	8.55	11.25	12.09	12.90						
	43		B.	37.73	38.60	39.56	40.52	43.18						
	44	Weisse, 31 - - - -	C.	0.52	1.58	2.42	3.31	4.22	3 2.44	0.11	11.67	14 3 13.99	6.02	
	45		D.	21.59	24.49	25.42	26.31	27.11						
	46		A.	46.45	47.27	48.27	51.12	52.15						
	47		B.	10.31	11.31	12.28	13.21	16.11						
	48	B. A. C, 4722 - - -	C.	34.29	35.26	36.12	37.18	38.08	7 36.17	— 0.11	+11.67	14 7 47.73	— 6.27	
	49		D.	56.31	59.22	0.15	1.09	1.92						
	50		E.	20.31	21.22	24.06	24.89	25.75						

33-34. Cloudy.
March 27. Azimuth cor. from Polaris, S. P., and α Virginis.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m.	n.	c.
h.	s	s.	s.	s.	s.
Mar. 27, 12.7	+ 11.68	— 0.007	— 0.062	+ 0.128	— 0.036

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	s.	s.	h. m. s	s.	
	1		B.	17.70	18.77	19.85	20.82	23.75						
Mar. 27	2	B. A. C., 4767 - - -	C.	42.92	43.81	44.75	45.81	46.64	16 44.75	— 0.16	+11.66	14 16 56.25	— 6.44	Y.
	3		D.	5.70	8.75	9.70	10.65	11.62						
	†4		B.	19.31	20.29	21.29	22.24	25.18						
29	†5	20 Libræ - - - - -	C.	44.50	45.55	46.38	47.30	48.35	55 58.70	12.47	13.26	14 55 59.49	6.51	
	†6		D.	7.43	10.49	11.52	12.48	13.40						
	†7		E.	32.50	33.59	36.43	37.49	38.39						
	8		B	41.91	42.90	43.88	44.72	47.70						
	9	ι^1 Libræ - - - - -	C.	6.08	7.10	7.96	8.90	9.81	4 7.99	0.09	13.26	15 4 21.16	6.33	
	10		D.	28.27	31.30	32.21	33.11	34.00						
	11		A.	33.31	34.32	35.22	37.92	38.84						
	12		B.	56.61	57.55	58.44	59.25	2.01						
	13	β Libræ - - - - -	C.	19.71	20.57	21.43	22.33	23.20	9 21.42	— 0.04	13.26	15 9 34.65	6.00	
	14		D.	40.95	43.70	44.55	45.43	46.30						
	15		E.	3.82	4.81	7.50	8.43	9.30						
	16		A.	43.87	44.90	45.94	49.05	50.09						
	17		B	9.67	10.62	11.68	12.70	15.70						
	†18	α Coronæ Borealis - -	C.	35.27	36.31	37.31	38.30	39.23	28 37.25	+ 0.05	13.27	15 28 50.57	5.07	
	19		D.	58.91	1.94	2.95	3.91	4.91						
	20		E.	24.41	25.41	28.36	29.41	30.40						
	21		A.	0.27	1.26	2.20	5.22	6.19						
	†22	Moon's 2d Limb - -	B	26.34	27.22	28.21	29.20	32.26	59 28.60	25.48	13.29	16 0 7.37	- - -	
	23		C.	52.09	53.09	54.17	55.10	56.12						
	24		B.	53.35	54.38	55.22	56.18	59.08						
Apr. 10	25	Weisse, 879 - - -	C.	17.03	18.09	18.89	19.81	20.59	48 18.86	0.07	19.53	10 48 38.47	5.62	
	26		D.	38.78	41.64	42.48	43.31	44.13						
	27		A.	46.05	46.93	47.87	50.70	51.61						
	28		B	9.19	10.09	10.89	11.82	14.62						
	29	χ Leonis - - - - -	C.	32.11	33.08	34.08	34.83	35.69	57 33.89	+ 0.11	19.53	10 57 53.53	5.94	
	30		D.	53.31	56.11	56.90	57.83	58.76						
	31		E	16.38	17.21	19.92	20.74	21.58						
	32	B. Z., 357, 22 - - -	D.	41.71	45.08	46.11	47.12	48.18	4 58.97	—40.16	19.53	11 4 38.34	6.55	
	33		E.	8.90	9.99	13.29	14.20	15.10						
	34	Weisse, 217 - - -	B.	51.29	52.26	53.13	54.00	57.07	13 16.56	+ 0.07	19.53	11 13 36.16	5.79	
	35		D.	36.22	38.82	39.71	40.57	41.52						
	36		C.	14.11	15.02	15.85	16.80	17.71						
	37	Weisse, 253 - - -	D.	35.38	38.82	39.29	40.19	41.02	15 38.84	—22.82	19.52	11 15 35.55	5.80	
	38		E.	58.78	59.70	2.50	3.28	4.15						
	39		B.	11.95	12.82	13.84	14.76	17.72						
	40	B. Z., 496, 3 - - -	C.	36.52	37.51	38.41	39.39	40.48	26 38.55	+ 0.08	19.53	11 26 58.16	6.25	
	41		D.	59.51	2.39	3.35	4.35	5.29						
	42		B.	8.61	9.62	10.51	11.43	14.17						
	43	υ Leonis - - - - -	C.	31.41	32.28	33.10	34.08	34.97	29 33.26	+ 0.07	19.53	11 29 52.86	5.94	
	44		D.	52.55	55.24	56.12	56.95	57.81						
	45		C.	29.97	31.05	31.90	32.90	33.82						
	46	Rumker, 3738 - - -	D	53.08	56.14	57.17	58.20	59.13	39 56.62	—24.54	19.53	11 39 51.61	6.27	
	47		E.	18.15	19.06	22.00	22.88	23.82						
	48	f 2d Comet, 1852 - -	C.	12.50	30.00	46.00	3.50	20.00	44 46.40	0.32	19.53	11 45 5.61	32.95	
	49	B. A. C., 4070 - - -	C	15.50	30.00	43.00	58.00	11.00	57 43.50	— 0.25	19.53	11 58 2.77	27.03	
	50		C.	38.81	39.81	40.75	41.69	42.71						
	51	B. Z, 412, +24° 28′ -	D.	1.87	4.98	5.99	6.81	7.71	1 5.38	+24.54	+19.53	12 1 0.36	— 6.24	
	52		E.	26.78	27.70	30.76	31.70	32.58						

CORRECTIONS, &c.

Date.	Error of clock	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
Mar. 29, 15. 2	+ 13.26	+ 0.031	— 0.012	— 0.128	— 0.036

4–7. Very dim.
18. Good observation.
22. Very dim; through clouds.

r.
March 27. 14*h.* 25*m.* Image west 0.05. Clamp west.
March 29. 16*h.* 15*m.* Image west 0.10. Clamp west. Night very thick; wind south.

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	s	s.	h. m s.	s.	
Apr. 10	1	Weisse, 63 - - - -	E.	37.28	38.13	40.80	41.63	42.54	5 40.08	−45.01	+19.53	12 5 14.59	— 6.06	Y.
	2		A.	43.70	44.63	45.49	48.13	49.68						
	3		B.	6.48	7.43	8.28	9.17	11.88						
	4	η Virginis - - - -	C.	29.22	30.20	31.14	31.95	32.84	12 31.07	+ 0.11	19.53	12 12 50.70	6.04	
	5		D	50.22	53.03	53.89	54.78	55.69						
	6		E.	13.09	14.00	16.63	17.45	18.36						
	7		B	25.82	26.82	27.68	28.60	31.48						
	8	Weisse, 390 - - -	C.	48.88	49.71	50.49	51.39	52.32	23 50.64	+ 0.07	19.52	12 24 10.24	6.08	
	9		D.	10.03	12.71	13.61	14.59	15.45						
	10	Weisse, 433 - - -	D	34.41	37.12	38.08	39.01	39.88	26 48.90	−33.67	19.52	12 26 34.75	6.07	
	11		E.	57.27	58.10	0.87	1.71	2.54						
	12		B.	18.82	19.80	20.82	21.70	24.50						
	13	Weisse, 526 - - -	C.	42.29	43.21	44.10	44.99	45.84	31 44.14	+ 0.08	19.52	12 32 3.75	6.10	
	14		D.	3.87	6.68	7.61	8.43	9.51						
	15	Weisse, 584 - - -	E.	47.98	48.82	51.53	52.41	53.30	35 50.81	−44.82	19.52	12 35 25.51	6.08	
	16		B.	3.35	4.28	5.18	6.15	8.83						
	17	Weisse, 757 - - -	C.	26.13	27.08	27.81	28.72	29.67	44 27.96	+ 0.07	19.52	12 44 47.56	6.07	
	18		D	47.12	49.97	50.89	51.70	52.60						
	19	Weisse, 933 - - -	E	12.92	13.74	16.50	17.39	18.25	55 15.76	−46.06	19.52	12 54 49.23	6.05	
	20	θ Virginis - - - -	D	47.82	50.65	51.63	52.48	53.40	3 2.41	−33.65	19.52	13 2 48.29	6.15	
	21		E	10.83	11.65	14.37	15.21	16.11						
	22	Polaris, S. P. - - -	C.	24.00	47.00	15.00	36.00	2.00	7 12.80	- -	- -	- - - -	- - -	
	23		A.	47.68	48.52	49.52	52.27	53.30						
	24		B.	10.96	11.87	12.73	13.62	16.39						
	25	α Virginis - - - -	C.	34.05	34.99	35.87	36.81	37.63	17 35.89	+ 0.10	19.52	13 17 55.52	6.23	
	26		D.	55.39	58.20	59.13	0.09	0.92						
	27		E.	18.60	19.49	22.28	23.11	23.95						
	28		A.	11.50	12.89	14.09	18.18	19.80						
	29		B.	45.90	47.45	48.88	50.38	53.99						
11	30	ι Ursæ Majoris - - -	C.	20.25	21.71	23.14	24.65	25.84	49 23.13	0.09	20.12	8 49 43.34	7.35	R.
	31		D.	52.18	56.25	57.61	59.05	0.26						
	32		E	26.48	27.83	31.90	33.37	34.62						
	33		B.	46.20	47.17	48.08	48.88	51.50						
	34	B. A. C., 3078 - - -	C.	8.88	9.88	10.75	11.61	12.50	54 10.82	0.04	20.12	8 54 30.98	5.50	
	35		D.	30.20	32.72	33.78	34.62	35.52						
	36		B.	11.58	12.58	13.52	14.53	17.60						
	37	B. A. C., 3121 - - -	C	36.89	37.82	38.68	39.61	40.61	1 38.75	0.02	20.13	9 1 58.90	4.60	
	38		D	0.00	2.89	4.02	4.95	5.93						
	39		A.	5.35	6.40	7.35	10.19	11.21						
	40		B.	29.71	30.54	31.36	32.49	35.18						
	41	83 Cancri - - - - -	C.	53.61	54.55	55.45	56.45	57.32	10 55.44	0.08	20.13	9 11 15.65	5.91	
	42		D.	15.85	18.52	19.50	20.43	21.40						
	43		E.	39.55	40.57	43.35	44.40	45.31						
	44		B.	11.87	13.06	14.04	14.93	17.70						
	45	B. A. C., 3206 - - -	C.	36.14	37.11	38.00	38.91	39.85	16 38.09	0.04	20.14	9 16 58.27	6.01	
	46		D.	58.41	1.39	2.35	3.31	4.27						
	47		B.	53.91	54.79	55.75	56.71	59.39						
	48	33 Hydræ - - - - -	C.	16.72	17.68	18.61	19.52	20.47	27 18.63	0.04	20.14	9 27 38.81	5.32	
	49		D.	37.75	40.67	41.58	42.43	43.38						
	50		B.	7.30	8.40	9.45	10.45	13.43						
	51	B. Z., 349, 70, +27° 41′	C.	33.14	34.20	35.20	36.22	37.22	37 35.20	+ 0.05	+20.15	9 37 55.40	— 6.33	
	52		D.	56.83	0.02	1.09	2.04	3.08						

April 10. 13*h*. 25*m*. Image 0. 13. Clp. west.
April 10. Azimuth cor. from Polaris, S. P., and α Virginis.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m*.	*n*.	*c*.
h.	s.	s.	s.	s	s.
Apr. 10, 12. 2	+ 19. 55	— 0. 004	+ 0. 111	+ 0. 015	— 0. 036
11, 10. 5	+ 20. 17	+ 0. 031	+ 0. 075	+ 0. 022	— 0. 036

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	s.	s.	h. m. s.	s.	
	1		B.	47.52	48.49	49.41	50.30	53.13						
Apr. 11	2	23 Leonis	C.	10.97	11.98	12.88	13.71	14.61	43 12.84	+ 0.04	+20.15	9 43 33.03	— 5.91	R.
	3		D	32.50	35.31	36.29	37.23	38.21						
	4		B	9.46	10.37	11.26	12.18	14.91						
	5	π Leonis	C.	32.48	33.43	34.30	35.25	36.12	52 34.30	0.04	20.15	9 52 54.49	5.78	
	6		D.	53.51	56.37	57.30	58.29	59.21						
	7		B.	10.90	11.90	12.87	13.80	16.92						
	8	B. A. C., 3489	C.	36.20	37.25	38.22	39.23	40.24	6 38.33	+ 0.02	20.16	10 6 58.51	5.12	
	9		D.	59.61	2.67	3.71	4.78	5.71						
	10		C.	16.21	17.21	18.19	19.16	20.08						
	11	Rumker, 3172	D.	37.50	40.38	41.41	42.30	43.28	17 40.94	—22.83	20.17	10 17 38.27	5.93	
	12		E.	0.72	1.69	4.32	5.30	6.31						
	13		B.	47.10	48.07	48.97	49.85	52.31						
	14	B. A. C., 3576	C.	9.61	10.58	11.51	12.45	13.38	20 11.60	+ 0.04	20.17	10 20 31.81	5.70	
	15		D.	30.71	33.50	34.38	35.32	36.30						
	16		A.	23.52	24.55	25.44	28.32	29.31						
	17		B.	46.84	47.75	48.74	49.65	52.65						
	18	ρ Leonis	C.	10.07	10.95	11.90	12.81	13.69	25 11.87	0.07	20.17	10 25 32.11	5.91	
	19		D.	31.28	34.18	35.08	36.02	36.90						
	20		E.	54.70	55.47	58.04	58.96	59.89						
	21		B.	6.89	7.94	9.11	10.19	13.32						
	22	37 Leonis Minoris	C	33.93	34.92	35.92	37.13	38.15	30 36.09	0.05	20.17	10 30 56.31	6.55	
	23		D.	58.75	2.30	3.28	4.30	5.30						
	24		B.	57.90	59.03	0.08	1.06	3.78						
	25	63 Hydræ	C.	22.08	23.12	24.07	25.03	25.93	46 24.12	+ 0.03	20.18	10 46 44.33	5.55	
	26		D.	44.39	47.30	48.35	49.38	50.29						
	27	B. A. C., 3773	C.	37.26	38.22	39.18	40.09	41.09	53 50.40	—11.17	20.19	10 53 59.42	5.86	
	28		D.	58.31	1.00	1.98	2.95	3.92						
	29		B.	47.32	48.51	49.59	50.68	53.92						
	30	B. Z., 499, 147, +36° 5′	C.	15.60	16.78	17.70	18.76	19.82	2 17.77	+ 0.05	20.19	11 2 38.01	6.63	
	31		D.	41.49	45.07	46.09	47.10	48.13						
	32		A.	34.33	35.40	36.44	39.30	40.35						
	33		B.	59.02	59.92	1.05	1.94	4.77						
	34	δ Leonis	C.	23.52	24.49	25.40	26.38	27.34	6 25.36	0.08	20.19	11 6 45.63	6.23	
	35		D.	45.90	48.98	49.92	50.82	51.87						
	36		E.	10.45	11.45	14.10	14.99	15.97						
	37		B.	10.48	11.37	12.31	13.23	15.89						
	38	B. A. C., 3920	C.	33.29	34.22	35.15	36.09	36.95	24 35.15	0.04	20.20	11 24 55.39	5.37	
	39		D	54.35	57.08	58.08	59.00	59.84						
	40		B.	29.95	31.04	32.15	33.30	36.65						
	41	B. Z, 359, 32, +36° 40′	C.	58.28	59.49	0.61	1.61	2.69	38 0.58	0.05	20.21	11 38 20.83	6.55	
	42		D.	24.65	27.88	29.07	30.10	31.20						
	43		B.	5.05	6.12	7.19	8.10	11.02						
	44	93 Leonis	C.	29.35	30.59	31.43	32.40	33.32	40 31.46	0.04	20.21	11 40 51.71	6.19	
	45		D.	52.03	54.89	55.85	56.72	57.79						
	46		A.	52.08	53.73	55.67	0.09	1.91						
	47		B.	31.68	33.06	34.61	36.02	40.87						
	48	γ Ursæ Majoris	C.	10.81	12.59	13.82	15.50	16.92	46 13.85	+ 0.10	+20.21	11 46 34.17	— 7.30	
	49		D.	47.09	51.40	53.20	54.68	56.22						
	50		E.	26.00	27.70	32.09	33.68	34.95						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
Apr. 11, 10.5	+ 20.17	+ 0.031	+ 0.075	+ 0.022	— 0.036

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	s.	s.	h. m. s.	s.	
	1		A.	50.50	51.41	52.32	55.22	56.30						
	2		B.	15.19	16.17	17.16	18.10	21.04						
Apr. 11	3	ε Corvi - - - - -	C.	39.70	40.57	41.50	42.58	43.48	2 41.58	+ 0.06	+20.22	12 3 1.86	— 6.04	R.
	4		D.	2.32	5.19	6.12	7.18	8.14						
	5		E.	26.81	27.90	30.52	31.50	32.60						
	6		B.	8.39	9.35	10.32	11.25	13.72						
	7	✡ (7) +6° 22′ - - -	C.	31.18	32.27	33.25	34.29	35.21	12 33.17	0.04	20.23	12 12 53.44	6.07	
	8		D.	52.36	54.98	56.05	57.06	57.88						
	9		A.	26.22	27.35	28.41	31.59	32.72						
	10		B.	53.34	54.31	55.37	56.41	59.68						
17	11	α^2 Geminorum - - -	C.	20.18	21.25	22.31	23.39	24.37	25 22.29	0.11	23.26	7 25 45.66	5.98	Y.
	12		D.	45.00	48.21	49.25	50.30	51.40						
	13		E.	11.91	12.91	16.15	17.13	18.09						
	14		B.	15.31	16.21	17.19	18.12	20.73						
	15	α Canis Minoris - - -	C.	38.23	39.20	39.95	40.92	41.80	31 40.03	0.00	23.26	7 32 3.29	4.90	
	16		D.	59.24	2.08	2.92	3.88	4.72						
	17		A.	33.16	34.19	35.19	38.20	39.36						
	18		B.	59.32	0.31	1.32	2.34	5.41						
	19	β Geminorum - - -	C	25.10	26.11	27.12	28.13	29.10	36 27.11	0.08	23.26	7 36 50.45	5.81	
	20		D.	48.91	52.10	53.10	54.11	55.08						
	21		E.	14.84	15.86	18.86	19.80	20.82						
	22		A.	51.40	52.39	53.38	56.32	57.32						
	23		B.	16.51	17.41	18.35	19.31	22.32						
	24	Moon's 1st Limb - -	C.	41.28	42.22	43.20	44.19	45.13	41 43.23	+ 0.07	23.26	7 42 6.56	- - -	
	25		D.	4.23	7.23	8.20	9.17	10.12						
	26		E.	29.13	30.12	33.05	33.92	34.88						
	27		C.	2.05	2.90	3.76	4.70	5.60						
	28	ε Hydræ - - - - -	D	23.04	25.80	26.80	27.61	28.56	39 26.34	—22.56	23.26	8 39 27.03	5.34	
	29		E.	45.98	46.89	49.55	50.48	51.36						
	30	Lalande, 17662 - -	B.	51.57	52.58	53.57	54.53	57.22	48 53.89	+23.00	23.26	8 49 40.15	4.79	
	31		A.	2.45	3.38	4.29	7.25	8.21						
	32		B.	26.61	27.48	28.48	29.41	32.21						
	33	83 Cancri - - - - -	C.	50.60	51.55	52.48	53.45	54.32	10 52.39	- -	- -	- - - -	- - -	
	34		D.	12.68	15.52	16.43	17.41	18.30						
	35		E.	36.47	37.48	40.23	41.12	42.06						
	36		B.	40.85	41.86	42.93	43.90	46.98						
	37	B. A. C., 3194 - - -	C.	6.31	7.28	8.28	9.21	10.21	15 8.22	0.05	23.26	9 15 31.53	6.13	
	38		D.	29.52	32.53	33.52	34.48	35.43						
	39		B.	42.31	43.27	44.29	45.31	48.38						
	40	B. Z., 345, +25° 1′ -	C	7.54	8.55	9.51	10.50	11.55	23 9.58	0.05	23.26	9 23 32.89	6.13	
	41		D.	30.73	33.86	34.86	35.81	36.78						
	42		A	50.82	51.81	52.79	55.61	56.50						
	43	Weisse, 867 - - -	B	14.34	15.36	16.19	17.06	19.60	39 16.47	+22.86	23.25	9 40 2.59	5.19	
	44		C.	37.70	38.63	39.42	40.21	41.13						
	45	Weisse, 868 - - -	D.	0.25	3.14	4.07	4.94	5.90	40 15.07	—34.32	23.25	9 40 4.07	5.19	
	46		E	23.63	24.48	27.23	28.05	29.00						
	†47	✡ (9) +11° 12′ - -	E.	45.53	46.44	49.17	50.00	50.89	41 48.41	—45.64	23.25	9 41 26.02	5.75	
	48		B.	19.13	20.26	21.22	22.14	25.17						
	49	✡ (8.9) +19° 27′ - -	C.	43.60	44.50	45.45	46.37	47.25	46 45.44	+ 0.04	23.25	9 47 8.73	6.01	
	50		D.	5.85	8.75	9.70	10.71	11.52						
	51		B.	57.58	58.45	59.46	0.47	4.00						
	†52	B Z., 275, +18° 44′ -	C.	22.34	23.19	24.10	24.92	25.84	51 23.95	+ 0.04	+23.25	9 51 47.25	— 6.00	
	53		D.	44.31	47.31	48.17	49.12	50.05						

47. Dim.
52. Very dim.

April 11. Image 0.10 west. Clp west.
17. Image 0.15 west. Clp. west.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate	m.	n.	c.
h.	s	s	s.	s.	s
Apr. 17, 9.2	+ 23.15	+ 0.012	+ 0.023	+ 0.150	— 0.036

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	s.	s.	h. m. s.	s.	
	1		B	32.78	33.76	34.67	35.61	38.61						
April 17	2	α Metis +21° 13′ - -	C.	57.17	58.07	58.98	59.94	0.83	57 59.09	+ 0.04	+23.25	9 58 22.39	— 6.09	Y.
	3		D.	19.63	22.70	23.60	24.52	25.53						
	4		C.	16.72	17.69	18.70	19.63	20.56						
	5	B. Z., 275, +20° 58′ -	D.	39.20	42.11	43.12	44.10	44.97	1 42.66	—23.95	23.25	10 1 41.97	6.09	
	6		E.	3.62	4.51	7.47	8.37	9.21						
	7		B.	59.60	0.43	1.39	2.21	5.18						
	8	Rumker, 3113 - - -	C.	22.79	23.71	24.78	25.67	26.53	8 13.23	+11.49	23.25	10 8 47.98	5.88	
	9	B. Z, 456, 21, +17° 49′	B.	26.72	27.70	28.60	29.65	32.42	20 29.02	23.59	23.25	10 21 15.86	6.04	
	10		C	16.34	17.45	18.60	19.75	20.86						
	11	B. Z., 499, 117, +36° 4′	E.	10.48	11.57	14.99	15.12	16.29	34 46.14	27.62	23.25	10 34 41.78	6.62	
	12		B.	6.08	7.08	7.97	8.80	11.60						
	13	Weisse, 716 - - -	C.	29.42	30.29	31.20	32.07	32.91	40 31.22	+ 0.02	23.25	10 40 54.50	5.97	
	14		D.	50.78	53.66	54.52	55.51	56.46						
	15	Weisse, 781 - - -	E.	12.28	13.13	15.89	16.73	17.58	44 15.12	—45.82	23.25	10 43 52.55	5.97	
	16		A.	5.18	7.30	9.31	14.91	17.48						
	17		B.	55.32	57.12	58.98	0.87	6.69						
	18	α Ursæ Majoris - - -	C.	44.36	46.51	48.20	50.25	52.08	54 48.18	+ 0.30	23.25	10 55 11.73	8.35	
	19		D.	29.71	35.81	37.82	39.48	41.41						
	20		E.	19.19	21.12	26.58	28.40	30.48						
	21		C.	20.45	21.48	22.37	23.29	24.30						
	22	δ Leonis - - - - -	D.	42.84	45.82	46.72	47.73	48.68	6 46.37	—24.00	23.25	11 6 45.62	6.20	
	23		E.	7.34	8.28	11.18	12.09	13.01						
	24		A.	14.16	15.16	15.95	18.87	19.80						
	25		B.	37.80	38.64	39.60	40.48	43.35						
	26	δ Hydræ et Crateris - -	C.	1.27	2.20	3.12	3.95	4.92	12 3.07	— 0.02	23.25	11 12 26.30	5.73	
	27		D.	22.91	25.62	26.61	27.50	28.46						
	28		E.	46.26	47.25	50.02	50.93	51.81						
	29		A.	26.88	27.84	28.82	31.50	32.78						
	30		B	51.45	52.32	53.31	54.28	57.18						
18	31	η Cancri - - - - -	C.	15.71	16.70	17.61	18.51	19.51	24 17.63	+ 0.06	24.47	8 24 42.16	5.76	R.
	32		D.	38.14	41.09	42.01	42.92	43.89						
	33		E.	2.58	3.62	6.37	7.35	8.31						
	34		A.	19.64	20.60	21.51	24.37	25.43						
	35		B.	44.03	45.08	46.05	47.14	49.73						
	36	Moon's 1st Limb - -	C.	8.43	9.39	10.32	11.25	12.22	37 10.25	0.06	24.45	8 37 34.76	- - -	
	37		D.	30.79	33.58	34.61	35.53	36.45						
	38		E.	54.98	55.97	58.69	59.67	0.69						
	39		A.	42.18	43.16	44.10	46.74	47.81						
	40		B.	5.57	6.57	7.51	8.41	11.10						
	41	α Cancri - - - - -	C.	28.68	29.76	30.72	31.61	32.55	50 30.70	0.05	24.43	8 50 55.19	5.57	
	42		D.	50.24	53.11	54.16	55.05	55.95						
	43		E.	13.57	14.59	17.12	18.15	19.07						
	44		A.	1.06	2.09	3.01	5.74	6.82						
	45		B.	25.27	26.20	27.21	28.17	30.88						
	46	83 Cancri - - - - -	C.	49.15	50.13	51.07	51.94	52.97	10 51.10	0.06	24.40	9 11 15.56	5.83	
	47		D.	11.21	14.30	15.25	16.20	17.21						
	48		E.	35.41	36.39	39.04	39.94	40.87						
	49		B.	7.40	8.45	9.36	10.31	13.05						
	†50	B. A. C., 3206 - - -	C.	31.65	32.75	33.66	34.61	35.55	16 33.68	+ 0.03	+24.39	9 16 58.11	— 5.93	
	51		D.	54.19	57.15	58.10	59.05	59.98						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
April 17, 9.2	+23.15	+ 0.012	+ 0.023	+ 0.150	— 0.036
18, 9.1	+24.40	— 0.090	+ 0.048	+ 0.055	— 0.036

50. Preceded by smaller stars.

April 17. 8*h.* 10*m.* Image west *r.* 0.15. Clp. west.

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	s.	s.	h. m. s.	s.	
	1		A.	35.35	36.25	37.25	39.82	40.90						
	2		B.	58.35	59.31	0.29	1.23	3.85						
Apr. 18	3	α Hydræ - - - - -	C.	21.42	22.38	23.31	24.22	25.12	20 23.25	+ 0.03	+24.39	9 20 47.67	— 5.13	R.
	4		D	42.54	45.32	46.29	47.30	48.19						
	5		E.	5.49	6.49	9.25	10.15	11.08						
	6		B.	19.47	20.62	21.81	23.05	26.60						
	† 7	ψ Argus - - - - -	C.	48.95	50.14	51.29	52.50	53.50	24 51.47	— 0.04	24.38	9 25 15.81	4.28	
	8		D.	16.54	20.20	21.45	22.45	23.49						
	9		A.	43.28	44.33	45.30	48.25	49.33						
	10		B.	8.48	9 42	10.51	11.40	14.42						
	11	ε Leonis - - - - -	C.	33.45	34.46	35.43	36.39	37.33	37 35.44	+ 0.07	24.36	9 37 59.87	6.13	
	12		D	56.46	59.65	0.51	1.52	2.52						
	13		E.	21.56	22.58	25.51	26.44	27.41						
	14	23 Leonis - - - - -	C.	6.65	7.67	8.55	9.45	10.41	43 20.15	—11.52	24.35	9 43 32.98	5.84	
	15		D.	28.31	31.12	32.16	33.12	34.05						
	16		A.	1.10	2.09	3.08	5.75	6.80						
	17		B.	25.29	26.19	27.12	28.05	30.99						
19	18	83 Cancri - - - - -	C.	49.10	50.21	51.07	52.05	52.87	10 51.07	+ 0.06	24.32	9 11 15.45	5.82	Y.
	19		D.	11.27	14.15	15.12	15.99	17.00						
	20		E.	35.22	36.26	39.09	39.94	40.93						
	21		A.	35.31	36.31	37.16	39.99	40.87						
	22		B.	58.43	59.35	0.28	1.04	3.85						
	23	α Hydræ - - - - -	C.	21.40	22.29	23.19	24.09	24.90	20 23.22	+ 0.03	24.33	9 20 47.58	5.12	
	24		D.	42.75	45.45	46.33	47.15	47.99						
	25		E.	5.57	6.55	9.25	10.05	10.88						
	26	Weisse, 488 - - -	E.	27.88	28.82	31.50	32.52	33.34	23 30.81	—45.81	24.33	9 23 9.33	5.03	
	27	Weisse, 498 - - -	C.	11.09	12.20	13.09	14.00	14.82	23 13.04	0.00	24.33	9 23 37.37	5.04	
	28		A.	56.73	57.60	58.51	1.40	2.41						
	29		B.	20.60	21.55	22.50	23.40	26.12						
	30	Moon's 1st Limb - -	C.	44.31	45.20	46.10	47.06	47.97	31 46.16	+ 0.05	24.35	9 32 10.56	- -	
	31		D.	6.20	9.11	10.07	10.92	11.80						
	32		E.	29.82	30.74	33.70	34.61	35.49						
	33		B.	8.50	9.57	10.59	11.53	14.50						
	34	ε Leonis - - - - -	C.	33.64	34.67	35.61	36.54	37.41	37 35.57	0.03	24.35	9 37 59.95	6.11	
	35		D.	56.61	59.79	0.62	1.50	2.45						
	36		A.	47.41	48.44	49.37	52.08	53.15						
	37		B.	11.00	11.95	12.89	13.76	16.45						
	†38	α Leonis - - - - -	C.	34.22	35.23	36.09	36.92	37.85	0 36.10	0.05	24.39	10 1 0.54	5.81	
	39		D.	55.82	58.65	59.51	0.40	1.35						
	40		E.	19.07	19.95	22.75	23.59	24.57						
	41		B.	44.03	44.93	45.84	46.77	49.54						
	42	Weisse, 234 - - -	C.	7.29	8.25	9.19	10.06	10.88	14 9.12	0.02	24.40	10 14 33.54	5.85	
	43		D.	28.71	31.45	32.40	33.22	34.20						
	44		B.	10.61	11.61	12.52	13.48	16.22						
	45	Weisse, 276 - - -	C.	34.04	34.90	35.89	36.78	37.60	16 35.79	0.02	24.41	10 17 0.22	5.86	
	46		D.	55.30	58.11	59.04	59.94	0.89						
	47		B.	30.75	31.59	32.55	33.50	36.15						
	48	Lalande, 20419 - -	C.	53.66	54.61	55.49	56.41	57.38	24 55.54	0.00	24.42	10 25 19.96	5.53	
	49		D.	14.89	17.65	18.60	19.45	20.39						
	50		B.	37.36	38.44	39.65	40.76	44.12						
	51	B. Z., 407, 118, +37° 14′	C.	6.03	7.17	8.29	9.41	10.51	34 8.26	+ 0.04	+24.42	10 34 32.72	— 6.54	
	52		D.	32.39	35.72	36.95	37.96	39.11						

7. Bad observation.
38. Cloudy night.
April 18 and 19. Azimuth cor. from α Ursæ Majoris and υ Leonis of 19th.
April 18. Image west 0.10 r. Clp. west. Suddenly clouds over.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m.	n.	c.
h.	s.	s.	s.	s.	s.
Apr. 19, 10.3	+ 24.41	+ 0.082	+ 0.048	+ 0.055	— 0.036

Hosted by Google

DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS Inst	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s	s	m. s.	s.	s.	h. m. s.	s.	
	1		A.	4.33	6.15	8.09	14.01	16.49						
	2		B.	53.91	55.92	57.78	59.62	5.58						
April 19	3	α Ursæ Majoris - - -	C.	43.22	45.00	47.08	49.13	50.75	54 47.09	+ 0.14	+24.46	10 55 11.70	— 8.30	Y.
	4		D.	28.75	34.70	36.50	38.28	40.36						
	5		E.	17.66	19.89	25.52	27.32	29.28						
	6		B.	41.82	42.73	43.78	44.60	47.45						
	7	Weisse, 61 - - - -	C.	4.95	5.91	6.81	7.72	8.52	5 6.82	0.02	24.47	11 5 31.31	5.98	
	8		D.	26.28	29.10	29.91	30.90	31.78						
	†9	Weisse, 233 - - -	B.	38.35	39.31	40.28	41.11	43.97	13 51.87	11.27	24.48	11 14 27.62	5.92	
	†10		C.	1.38	2.32	3.20	3.99	4.81						
	11		A.	40.81	41.72	42.62	45.27	46.34						
	12		B.	3.67	4.52	5.40	6.38	9.12						
	13	υ Leonis - - - - -	C.	26.43	27.37	28.20	29.18	30.07	29 28.24	0.04	24.51	11 29 52.79	5.92	
	14		D.	47.49	50.21	51.15	52.07	52.78						
	15		E.	10.24	11.12	13.78	14.60	15.51						
	16		B.	0 07	1.00	2.07	3.06	6.04						
	17	Rumker, 3738 - - -	C.	25.17	26.14	27.11	28.07	28.95	39 27.04	0.03	24.52	11 39 51.59	6.24	
	18		D.	48.08	51.05	51.98	52.91	53.90						
	19		B.	11.00	12.01	12.80	13.79	16.42						
	20	β Leonis - - - - -	C.	34.41	35.51	36.39	37.28	38.19	41 36.44	+ 0.03	24.52	11 42 0.99	6.06	
	21		D.	56.37	59.22	0.17	1.11	1.91						
	22		C.	4.69	5.83	6.80	7.70	8.64						
20	23	B. Z, 345,44, + 25° 0′	D.	28.13	31.12	32.09	33.08	33.90	23 31.57	—24.72	25.84	9 23 32.70	6.09	
	24		E.	53.17	54.20	57.20	58.08	58.99						
	25		B.	50.17	51.28	52.68	53.85	57.11						
	26	B. Z., 450,82, +39° 34′	C.	19.79	20.99	22.17	23.24	24.40	32 22.16	+ 0.02	25.85	9 32 48.03	6.72	
	27		D.	47.04	50.72	51.84	53.03	54.08						
	28		B.	7.20	8.09	9.19	10.08	13.04						
	29	ε Leonis - - - - -	C.	32.19	33.15	34.06	35.08	36.00	37 34.10	0.00	25.86	9 37 59.96	6.10	
	30		D.	55.11	58.05	59.10	0.08	1.04						
	31		B	10.11	10.89	11.88	12.71	15.60						
	32	Weisse, 1024 - - -	C.	33.20	34.28	35.13	36.00	36.87	47 35.09	— 0.01	25.87	9 48 0.96	5.73	
	33		D.	54.60	57.44	58.35	59.26	0.11						
	34		A.	40.48	41.41	42.39	45.05	46.08						
	35		B.	3.61	4.61	5.60	6.41	9.31						
	36	π Leonis - - - - -	C.	26.71	27.75	28.55	29.42	30.38	52 28.55	+ 0.02	25.87	9 52 54.44	5.69	
	37		D.	47.97	50.80	51.68	52.52	53.46						
	38		E.	11.07	11.99	14.60	15.49	16.35						
	39		B.	9.51	10.46	11.38	12.16	14.99						
	40	α Leonis - - - - -	C.	32.80	33.69	34.61	35 47	36.31	0 34.66	— 0.01	25.88	10 0 0.54	5.80	
	41		D.	54.43	57.18	58.14	59.00	59.83						
	42	B. Z., 497,51, +43° 20′	D.	53.13	57.14	58.41	59.80	0.86	9 13.17	—46.18	25.89	10 8 52.87	6.92	
	43		E.	24.73	26.08	29.27	30.47	31.79						
	44		B	3.43	4.48	5.35	6.25	9.21						
	45	✡ (9) +18° 8′ - - -	C.	27.28	28.11	29.11	29.99	30.90	18 29.24	0.00	25.90	10 18 55.14	6.01	
	46		D.	49.50	52.43	53.32	54.20	55.11						
	47		A.	11.91	12.82	13.70	16.45	17.48						
	48		B.	35.30	36.18	37.11	38.12	48.83						
	49	Moon's 1st Limb - -	C.	58.90	59.71	0.61	1.43	2.40	26 0.58	+ 0.01	25.91	10 26 26.51	- -	
	50		D.	20.33	23.12	24.08	24.98	25.80						
	51		E.	43.82	44.64	47.42	48.24	49.21						
	52	B. Z., 499,114, +36° 10′	B	16.55	17.70	18.75	19.93	23.28	31 46.95	+ 0.01	+25.91	10 32 12.87	— 6.58	
	53		D.	10.91	14.01	15.12	16.11	17.14						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
Apr. 19, 10.3	+ 24.41	+ 0.082	+ 0.048	+ 0.055	— 0.036
20, 10.6	+ 25.92	+ 0.059	+ 0.017	+ 0.055	— 0.036

9–10. Cloudy.

April 19. 11*h.* 50*m.* Image west *r.* 0.10. Clp. west.

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	s.	s.	h. m. s	s	
	1		B.	3.38	4.27	5.18	6.05	8.69						
April 20	2	37 Sextantis - - - -	C.	26.30	27.29	28.13	29.08	29.87	38 28.13	— 0.01	+25.92	10 38 54.04	— 5.83	Y.
	3		D.	47.48	50.20	51.17	51.98	52.91						
	4		C.	31.83	32.89	33.65	34.68	35.47						
	5	*l* Leonis - - - - -	D.	53.21	56.24	57.17	58.04	58.90	42 56.58	—22.85	25.92	10 42 59.65	5.92	
	6		E.	16.51	17.41	20.14	20.87	21.87						
	7		A.	12.00	12.98	13.87	16.53	17.55						
	8		B.	35.07	35.90	36.79	37.62	40.37						
	9	*d* Leonis - - - - -	C.	57.80	58.72	59.60	0.47	1.41	52 59.62	+ 0.02	25.93	10 53 25.57	5.83	
	10		D.	18.85	21.70	22.55	23.41	24.21						
	11		E	41.73	42.75	45.40	46.21	47.03						
	12		B.	2.60	3.62	4.51	5.46	8.12						
	13	χ Leonis - - - - -	C.	25.76	26.70	27.55	28.45	29.28	57 27.55	— 0.01	25.94	10 57 53.47	5.87	
	14		D.	47.00	49.73	50.62	51.51	52.32						
	15		B.	40.33	41.35	42.37	43.18	45.97						
	16	Weisse, 61 - - - -	C.	3.53	4.48	5.31	6.25	7.13	5 5.40	— 0.01	25.94	11 5 31.34	5.97	
	17		D.	24.78	27.71	28.67	29.60	30.41						
	18		B.	51.45	52.55	53.40	54.48	57.85						
	19	B. Z., 501,107, +32° 55′	C.	18.49	19.50	20.49	21.50	22.51	7 20.57	+ 0.01	25.95	11 7 46.53	6.45	
	20		D.	43.50	46.72	47.65	48.73	49.71						
	21		B.	36.90	37.92	38.87	39.77	42.52						
	22	Weisse, 233 - - -	C.	59.97	0.91	1.75	2.66	3.52	14 1.75	— 0.01	25.95	11 14 27.69	5.91	
	23		D.	20.89	23.79	24.67	25.59	26.49						
	24		B.	6.18	7.08	8.08	8.96	11.55						
	25	Weisse, 258 - - -	C.	29.05	29.94	30.82	31.78	32.62	15 30.83	0.01	25.95	11 15 56.77	5.92	
	26		D.	49.99	52.70	53.66	54.62	55.45						
	27		C.	25.04	25.97	26.87	27.79	28.63						
	28	*v* Leonis - - - - -	D.	46.00	48.83	49.67	50.49	51.36	29 49.23	—22.42	25.97	11 29 52.78	5.91	
	29		E.	8.72	9.58	12.35	13.15	14.04						
	30		A.	10.75	11.68	12.57	15.21	16.19						
	31		B.	33.72	34.59	35.52	36.41	39.06						
21	32	*d* Leonis - - - - -	C.	56.55	57.50	58.34	59.19	0.09	52 58.31	0.00	27.24	10 53 25.56	5.82	
	33		D.	17.52	20.34	21.19	22.07	22.92						
	34		E.	40.37	41.23	43.91	44.81	45.60						
	35		A.	38.37	39.21	40.11	42.72	43.78						
	36		B.	1.45	2.34	3.27	4.18	6.81						
	37	χ Leonis - - - - -	C.	24.50	25.37	26.22	27.18	28.00	57 26.22	+ 0.01	27.24	10 57 53.47	5.86	
	38		D.	45.57	48.39	49.28	50.18	51.09						
	39		E.	8.57	9.52	12.16	13.06	13.92						
	40		B.	52.02	52.89	53.87	54.81	57.74						
	41	δ Leonis - - - - -	C.	16.36	17.36	18.32	19.25	20.22	6 18.33	— 0.01	27.23	11 6 45.55	6.16	
	42		D.	38.93	41.86	42.86	43.85	44.70						
	43		A.	10.21	11.19	12.12	14.94	15.88						
	44		B.	33.91	34.82	35.70	36.64	39.39						
	45	δ Hydræ et Crateris - -	C.	57.30	58.28	59.18	0.11	0.88	11 59.15	0.01	27.23	11 12 26.37	5.69	
	46		D.	18.92	21.70	22.71	23.64	24.48						
	47		E.	42.52	43.38	46.07	46.94	47.90						
	48		A.	59.69	0.62	1.45	4 16	5.21						
	49		B.	23.10	23.97	24.91	25.81	28.60						
	50	Moon's 1st Limb - -	C.	46.48	47.36	48.29	49.11	49.97	20 48.22	0.00	27.22	11 21 15.43	- -	
	51		D.	7.89	10.66	11.66	12.52	13.35						
	52		E	31.30	32.17	34.82	35.75	36.58						
	53		B.	23.73	24.60	25.52	26.41	29.15						
	54	*e* Leonis - - - - -	C.	46.52	47.43	48.33	49.27	50.10	22 48.38	— 0.03	+27.22	11 23 15.57	— 5.86	
	55		D.	7.59	10.30	11.21	12.10	13.00						

April 20. 11*h*. 40*m*. Image west 0.07*r*. Clp. west.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m*.	*n*.	*c*.
h.	s.	s.	s.	s.	s.
Apr. 20, 10.6	+ 25.92	+ 0.059	+ 0.017	+ 0.055	— 0.036
21, 11.4	+ 27.21	— 0.056	+ 0.007	+ 0.055	— 0.036

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	s.	s.	h. m. s.	s.	
	1		A.	38.10	39.05	39.92	42.64	43.62						
	2		B.	1.09	2.00	2.87	3.72	6.40						
Apr. 21	3	υ Leonis	C.	23.74	24.61	25.61	26.41	27.30	29 25.57	0.00	+27.21	11 29 52.78	— 5.90	Y.
	4		D.	44.80	47.53	48.42	49.33	50.15						
	5		E.	7.58	8.42	11.13	12.00	12.75						
	6	B. Z., 503, 11, +24° 45′	E.	54.78	55.74	58.75	59.69	0.60	36 57.91	—49.33	27.21	11 36 35.79	6.22	
	7		A.	44.50	45.51	46.38	49.22	50.14						
	8		B.	8.29	9.15	10.12	11.04	13.93						
	9	β Leonis	C.	31.86	32.87	33.69	34.63	35.60	41 33.72	+ 0.01	27.20	11 42 0.94	6.04	
	10		D.	53.69	56.52	57.41	58.39	59.23						
	11		E.	17.29	18.10	20.93	21.81	22.70						
	12		B.	6.00	20.00	34.00	48.50	31.00						
	†13	B. A. C., 4070	C.	4.50	19.00	32.50	47.50	1.00	57 33.07	+ 0.30	27.18	11 58 0.56	25.25	
	14		D.	35.00	18.00	32.00	47.00	0.00						
	15		B.	58.94	59.79	0.76	1.54	4.31						
	†16	η Virginis	C.	21.81	22.61	23.49	24.45	25.29	12 23.50	— 0.03	27.17	12 12 50.64	6.04	
	17		D.	42.62	45.37	46.21	47.17	48.08						
22	†18	e Leonis	D.	7.05	9.84	10.74	11.63	12.51	23 21.51	—33.45	27.54	11 23 15.60	5.85	
	†19		E.	29.88	30.73	33.38	34.26	35.11						
	†20	υ Leonis	A.	37.57	38.50	39.39	42.01	43.12	29 24.97	+ 0.26	27.53	11 29 52.76	5.89	
	†21		E.	7.06	7.91	10.55	11.35	12.23						
	†22	Moon's 1st Limb	B	49.00	49.80	50.66	51.59	54.39	17 25.94	—11.42	27.50	12 17 42.01	- -	
	†23		E.	57.86	58.87	1.51	2.38	3.34						
	†24	ψ Virginis	A.	55.00	55.93	56.82	59.60	0.51	46 42.97	+ 0.25	27.49	12 47 10.71	6.18	
	†25		E.	25.55	26.42	29.11	29.92	30.80						
	26		A.	33.16	34.09	34.95	37.62	38.58						
	27		B.	56.12	56.97	57.90	58.73	1.51						
	28	θ Virginis	C.	18.87	19.85	20.71	21.60	22.50	2 20.67	0.21	27.46	13 2 48.34	6.19	
	29		D.	39.04	42.83	43.65	44.50	45.30						
	30		E.	2.78	3.68	6.40	7.23	8.09						
	31		A.	39.70	40.53	41.50	44.28	45.30						
	32		B	2.90	3.90	4.85	5.65	8.50						
	33	α Virginis	C.	26.17	27.09	27.90	28.82	29.72	17 27.92	+ 0.20	27.45	13 17 55.58	6.30	
	34		D.	47.43	50.28	51.18	52.08	52.98						
	35		E.	10.62	11.43	14.23	15.08	15.90						
24	36	B. A. C., 4088	D.	8.13	11.52	12.52	13.59	14.67	1 25.59	—40.43	28.15	12 1 13.31	6.07	
	37		E.	35.79	36.71	40.09	40.92	41.93						
	38	B. A. C., 4095	C.	25.02	26.13	27.08	28.17	29.27	2 27.13	+ 0.06	28.15	12 2 55.35	6.10	
	39		B.	57.89	58.78	59.72	0.61	3.31						
	40	η Virginis	C.	20.57	21.56	22.41	23.30	24.17	12 22.43	0.09	28.15	12 12 50.67	6.02	
	41		D.	41.55	44.41	45.23	46.07	46.92						
	42	Weisse, 360	C.	33.73	34.55	35.46	36.36	37.15	21 35.45	0.10	28.14	12 22 3.69	6.06	
	43	Weisse, 463	C.	44.09	44.89	45.86	46.78	47.67	27 45.78	0.09	28.14	12 28 14.01	6.07	
	†44	Weisse, 583	C.	50.80	51.83	52.70	53.59	54.52	34 52.69	0.09	28.14	12 35 20.92	6.09	
	45	Weisse, 736	C.	9.49	10.28	11.16	11.97	12.80	43 11.14	0.09	28.14	12 43 39.37	6.11	
	46	Weisse, 757	C.	17.60	18.48	19.41	20.28	21.11	44 19.38	0.09	28.14	12 44 47.60	6.11	
	47	Weisse, 835	C.	51.58	52.58	53.50	54.42	55.32	48 53.48	0.09	28.13	12 49 21.70	6.13	
	48	Weisse, 878	C.	24.56	25.48	26.40	27.27	28.10	51 26.36	+ 0.09	28.13	12 51 54.59	6.14	
	49	Weisse, 929	D.	23.12	26.05	27.08	27.87	28.70	54 26.56	—22.99	28.13	12 54 31.70	6.10	
	50	i 2d Comet 1852	C.	16.98	24.78	34.14	42.90	51.36	58 34.03	+ 0.06	28.13	12 59 2.22	11.85	
	51		B	55.60	56.42	57.31	58.18	0.73						
	52	θ Virginis	C.	18.22	19.12	19.90	20.95	21.76	2 20.07	+ 0.09	+28.13	13 2 48.30	— 6.19	
	53		D.	39.33	42.06	42.93	43.86	44.75						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m.	n.	c.
h.	s.	s.	s.	s.	s.
Apr. 21, 11.4	+ 27.21	— 0.056	+ 0.007	+ 0.055	— 0.036
22, 12.6	+ 27.48	— 0.045	+ 0.220	+ 0.055	— 0.036

13. Steady. Observed with E. and E.
16. Dim; through clouds
18–19. Dim; through clouds.
20–21. Through clouds.
22–23. Through clouds. Better than no observation.
24–25. Cloudy.
44. Dim.

r.
April 21. 12h. 20m. Image west 0.06. Clamp west.
22. 12h. 40m. Image west 0.21. Clamp west.
22. Great change of temperature since last reading.

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension	Reduct'n to 1860.0.	Observer.
				s.	s.	s.	s.	s.	m. s	s.	s.	h. m. s.	s.	
1861. Apr. 24	1	Polaris, S. P.	C.	20.00	46.00	10.00	30.00	55.00	7 8.20	- -	- -	- - - -	- -	Y.
	2		C.	41.39	42.39	43.31	44.22	45.12						
	3	61 Virginis	D.	3.41	6.27	7.17	8.15	9.09	11 6.74	—23.41	+28.13	13 11 11.45	— 6.31	
	4		E.	27.13	28.06	30.87	31.77	32.70						
	5		A.	39.13	40.07	40.82	43.70	44.61						
	6		B.	2.21	3.24	4.13	4.99	7.70						
	†7	α Virginis	C.	25.44	26.40	27.32	28.22	29.10	17 27.31	+ 0.12	28.12	13 17 55.55	6.30	
	8		D.	46.83	49.69	50.48	51.40	52.29						
	9		E.	10.10	10.90	13.73	14.58	15.43						
	10	Weisse, 458	C.	17.40	18.42	19.23	20.11	20.87	27 19.21	0.10	28.12	13 27 47.42	6.15	
	11		B.	45.60	46.46	47.38	48.40	51.18						
	12	B. A. C., 4560	C.	8.78	9.75	10.60	11.60	12.50	33 10.72	0.09	28.12	13 33 38.93	6.39	
	13		D.	30.52	33.15	34.17	35.04	35.89						
	14	Weisse, 674	C.	30.69	31.52	32.36	33.22	34.12	39 32.38	0.08	28.12	13 40 0.58	6.40	
	15		B.	44.79	45.66	46.52	47.47	50.21						
	16	τ Virginis	C.	7.64	8.52	9.46	10.29	11.21	54 9.39	+ 0.10	28.11	13 54 37.60	6.21	
	17		D.	28.59	31.34	32.22	33.05	33.91						
	18		C.	52.37	53.30	54.22	55.20	56.12						
	19	α Bootis	D.	14.57	17.59	18.41	19.27	20.26	9 18.01	—23.73	28.10	14 9 22.39	5.87	
	20		E.	38.69	39.71	42.60	43.48	44.38						
	21		B.	15.49	16.40	17.38	18.32	21.32						
	22	Moon's 1st Limb	C.	40.35	41.34	42.23	43.22	44.18	18 42.34	+ 0.08	28.10	14 19 10.52	- -	
	23		D.	3.45	6.50	7.43	8.32	9.19						
	24		A.	18.09	18.96	19.97	23.00	23.91						
	25		B	43.08	43.91	44.85	45.89	48.92						
	26	Moon's 2d Limb	C.	8.15	9.08	9.96	10.95	11.89	21 9.95	0.12	28.10	14 21 38.16	- -	
	27		D.	31.12	34.05	34.90	35.91	36.89						
	28		E.	56.05	56.89	59.87	0.71	1.70						
	29	Weisse, 503	C.	42.30	43.19	43.94	44.80	45.68	27 43.98	0.09	28.10	14 28 12.17	6.36	
	30	Weisse, 668	C.	37.11	38.07	38.86	39.81	40.64	36 38.90	+ 0.09	28.09	14 37 7.08	6.38	
	31		C.	44.94	45.93	46.82	47.71	48.55						
	32	α^2 Libræ	D.	6.56	9.33	10.37	11.39	12.28	43 9.99	—23.16	28.09	14 43 14.92	6.63	
	33		E.	30.17	31.20	34.05	34.91	35.71						
	34		B.	27.37	28.33	29.33	30.22	33.10						
	35	ι^1 Libræ	C.	51.37	52.45	53.28	54.30	55.16	3 53.37	+ 0.08	28.08	15 4 21.54	6.80	
	36		D.	13.71	16.59	17.55	18.52	19.37						
	37		B.	42.09	42.88	43.81	44.60	47.41						
	38	β Libræ	C.	5.09	6.09	6.91	7.80	8.71	9 6.89	0.09	28.08	15 9 35.06	6.46	
	39		D.	26.40	29.10	29.95	30.81	31.70						
	40		A	21.58	22.50	23.41	25.91	27.15						
	41		B.	44.47	45.40	46.32	47.22	49.85						
25	†42	τ Virginis	C.	7.32	8.27	9.23	10.19	11.19	54 9.14	0.17	28.27	13 54 37.58	6.21	R.
	43		D.	28.41	31.31	32.20	33.21	34.09						
	44		E.	50.99	52.00	54.53	55.50	56.38						
	45		B	26.30	27.30	28.25	29.22	31.71						
	46	B. A. C., 4773	C.	49.35	50.31	51.21	52.21	53.10	16 51.16	0.14	28.26	14 17 19.56	6.17	
	47		D.	10.50	13.09	14.07	14.95	15.88						
	48		B.	44.00	44.87	45.95	46.90	50.10						
	49	σ Bootis	C.	10.17	11.21	12.22	13.19	14.15	28 12.26	0.15	28.25	14 28 40.66	5.81	
	50		D.	34.50	37.71	38.68	39.68	40.69						
	51		B.	35.58	36.50	37.48	38.37	40.94						
	52	108 Virginis	C.	58.48	59.39	0.32	1.24	2.25	38 0.39	+ 0.14	+28.25	14 38 28.78	— 6.21	
	53		D.	19.30	22.22	23.17	24.10	25.05						

7. Unsteady.
42. Unsteady.
April 24. Azimuth cor. from Polaris, S. P., and α Virginis.

24. 15*h*. 15*m*. Image west *r*. 0. 15. Clamp west.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m*.	*n*.	*c*.
h. Apr. 24, 13.8	s. + 28.11	s. — 0.022	s. + 0.130	s. + 0.030	s. — 0.036

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	s.	s.	h. m. s.	s.	
	1		A.	57.27	58.22	59.21	1.69	2.73						
	2		B.	21.15	22.07	23.00	23.95	26.42						
Apr. 25	†3	α^2 Libræ - - - - - -	C.	44.52	45.50	46.46	47.33	48.26	42 46.51	+ 0.16	+28.25	14 43 14.92	— 6.65	R.
	4		D.	6.50	9.31	10.29	11.24	12.23						
	5		E.	30.21	31.26	33.80	34.65	35.58						
	6		A.	2.88	3.86	4.80	7.75	8.87						
	7		B.	27.22	28.21	29.19	30.17	32.89						
	8	ι^1 Libræ - - - - - -	C.	51.30	52.23	53.22	54.21	55.21	3 53.20	0.15	28.24	15 4 21.59	6.82	
	9		D.	13.50	16.35	17.31	18.31	19.29						
	10		E.	37.51	38.51	41.45	42.38	43.31						
	11		A.	44.61	45.50	46.50	49.62	50.81						
	12		B.	10.33	11.30	12.37	13.29	16.42						
	13	Moon's 2d Limb - -	C.	36.00	36.94	38.00	38.98	40.05	26 37.98	0.15	28.22	15 27 6.36	- -	
	14		D.	59.46	2.45	3.42	4.45	5.40						
	15		E.	25.40	26.40	29.50	30.50	31.39						
	16		A.	12.27	13.23	14.20	16.68	17.68						
	17		B.	35.08	36.09	37.09	38.08	40.70						
	18	α Serpentis - - - - -	C.	58.29	59.27	0.18	1.08	2.08	37 0.01	0.17	28.22	15 37 28.40	6.03	
	19		D.	19.42	22.18	23.18	24.08	25.03						
	20		E.	41.89	42.93	45.55	46.49	47.43						
	21		A.	6.20	7.20	8.17	10.81	12.08						
	22		B.	30.42	31.40	32.45	33.31	36.21						
	23	β^1 Scorpii - - - - - -	C.	54.75	55.70	56.61	57.61	58.57	56 56.55	0.15	28.22	15 57 24.92	6.86	
	24		D.	16.91	19.75	20.71	21.81	22.74						
	25		E.	41.14	42.03	44.71	45.71	46.69						
	26		A.	39.78	40.89	41.81	44.68	45.80						
	27		B.	4.21	5.13	6.11	6.96	9.60						
	28	ν Scorpii - - - - - -	C.	28.32	29.28	30.22	31.20	32.20	3 30.13	0.15	28.21	16 3 58.49	6.85	
	29		D.	50.48	53.22	54.25	55.23	56.22						
	30		E.	14.50	15.59	18.22	19.28	20.21						
	31		B.	13.98	14.90	15.87	16.74	19.48						
	32	δ Ophiuchi - - - - -	C.	36.59	37.57	38.50	39.46	40.39	6 38.60	0.13	28.20	16 7 6.93	6.25	
	33		D.	57.73	0.55	1.45	2.42	3.32						
	34		B.	11.50	14.90	18.42	22.44	32.47						
26	35	β Ursæ Minoris - - -	C.	38.05	41.82	45.11	48.57	51.91	50 45.11	+ 0.39	28.62	14 51 14.12	5.00	Y.
	36		D.	58.41	8.23	11.78	14.80	18.27						
	37	Weisse, 1150 - - -	C.	55.85	56.78	57.68	58.58	59.46	0 57.67	— 0.03	28.61	15 1 26.26	6.64	
	38	Weisse, 221 - - -	B.	33.85	34.71	35.52	36.34	39.12	12 35.91	+23.02	28.60	15 13 27.53	— 6.64	
	39	B. A. C., 5140 - - -	C.	44.00	7.00	28.00	52.00	12.00	23 28.60	+ 2.46	28.60	15 23 59.66	+ 2.44	
	40		C.	20.48	21.44	22.37	23.25	24.17						
	41	α Coronæ Borealis - -	D.	44.28	47.31	48.31	49.23	50.14	28 47.68	—25.12	28.59	15 28 51.15	— 5.59	
	42		E.	9.58	10.65	13.77	14.66	15.54						
	43		B.	6.75	7.73	8.62	9.39	12.38						
	44	B. A. C., 5184 - -	C.	30.41	31.35	32.21	33.10	34.07	34 32.27	0.04	28.59	15 35 0.82	6.71	
	45		D.	52.28	55.03	55.90	56.80	57.64						
	46	Lalande, 28726 - -	D.	18.20	21.09	22.11	22.91	23.83	39 21.63	23.57	28.59	15 39 26.65	6.82	
	47	B. A. C., 5254 - - -	B.	48.10	48.97	50.01	50.95	53.94	45 14.85	0.06	28.58	15 45 43.37	7.07	
	48		D.	35.70	38.71	39.81	40.70	41.57						
	49		A.	6.11	7.13	7.95	10.80	11.88						
	50		B.	30.40	31.28	32.31	33.14	36.11						
	51	β^1 Scorpii - - - - - -	C.	54.44	55.50	56.41	57.39	58.38	56.56.42	— 0.02	+28.57	15 56 24.98	— 6.89	
	52		D.	16.92	19.78	20.60	21.58	22.56						
	53		E.	41.10	41.98	44.69	45.59	46.52						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m.	n.	c.
h. Apr. 25, 15.3	s. + 28.23	s. — 0.030	s. + 0.171	s. + 0.030	s. — 0.036

3. Unsteady.

April 25. Image west 0.20 r. Clamp west. Night bad; stars unsteady.

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Date.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
	1		C.	28.27	29.29	30.12	31.08	32 05						
Apr. 26	2	ν Scorpii - - - - -	D.	50.40	53.36	54.29	55.20	56.08	3 53.84	— 23.76	+28.57	16 3 58.65	— 6.87	Y.
	3		E.	14.41	15.42	18.37	19.19	20.06						
	4		B.	52.59	53.63	54.52	55.51	58.61						
	5	σ Scorpii - - - - -	C.	17.65	18.62	19.58	20.63	21.55	12 19.72	0.07	28.56	16 12 48.22	7.16	
	6		D.	41.19	44.08	45.02	45.87	46.75						
	7		B.	0.89	1.92	2.92	3.95	7.12						
	8	α Scorpii - - - - -	C.	26.40	27.58	28.47	29.52	30.45	20 28.44	0.07	28.56	16 20 56.93	7.20	
	9		D.	49.82	52.93	53.89	54.85	55.85						
	10	Groombridge, 2356 -	D.	27.79	36.60	39.50	42.07	44.88	28 13.47	1 46.67	28.55	16 26 55.35	2.83	
	11		E.	39.92	42.41	51.67	53.52	56.37						
	12		A.	46.18	47.16	48.17	51.45	52.48						
	13		B.	12.43	13.52	14.57	15.57	18.82						
	†14	Moon's 2d Limb - -	C.	38.85	39.70	40.79	41.71	42.63	33 40.61	0.03	28.55	16 34 9.12	- -	
	15		D.	2.53	5.76	6.77	7.75	8.62						
	16		E.	28.84	29.76	32.81	33.65	34.66						
	17	κ Ophiuchi - - - -	D.	59.14	2.03	2.94	3.81	4.64	51 13.78	— 34.06	28.54	16 51 8.25	5.71	
	18		E.	22.23	23.03	25.78	26.65	27.52						
	19		B.	11.93	15.18	18.52	21.54	30.88						
	20	B. A. C., 5769 - - -	C.	31.87	35.06	38.20	40.88	44.32	58 37.98	+ 0.36	28.53	16 59 6.87	1.84	
	21		D.	44.87	54.21	57.59	0.90	3.75						
	22		A.	15.04	16.04	16.91	19.82	21.10						
	23	39 Ophiuchi - - - -	C.	5.18	6.23	7.20	8.19	8.95	9 7.05	— 0.01	28.52	17 9 35.56	7.02	
	24		E.	53.19	54.15	56.99	57.89	58.85						
	25	B. A. C., 5829 - - -	B.	40.19	41.05	42.12	43.10	46.04	9 7.05	0.06	28.52	17 9 35.51	7.03	
	26		D.	28.07	31.08	31.98	32.97	33.92						
	27		B.	36.20	37.25	38.23	39.25	42.36						
	28	θ Ophiuchi - - - -	C.	1.42	2.49	3.37	4.31	5.24	13 3.39	0.06	28.52	17 13 31.85	7.05	
	29		D.	24.51	27.58	28.59	29.55	30.55						
	30		B.	23.20	24.32	25.41	26.43	29.66						
	31	B. A. C., 6032 - - -	C.	49.97	51.07	52.05	53.11	54.14	42 52.07	— 0.09	28.50	17 43 20.49	7.33	
	32		D.	14.58	17.72	18.82	19.86	20.79						
	33		B.	47.00	2.00	17.00	33.00	17.00						
28	†34	δ Ursæ Minoris - - -	C.	12.00	26.00	41.00	55.00	11.00	16 41.53	- -	- -	- - - -	- -	
	35		D.	6.00	51.00	7.00	22.00	36.00						
	36		A.	15.68	16.62	17.65	20.50	21.70						
	37		B.	41.54	42.56	43.52	44.52	47.44						
	38	Moon's 2d Limb - -	C.	7.21	8.22	9.17	10.14	11.07	43 9.18	+ 0.01	28.59	18 43 37.78	- -	
	39		D.	30.92	34.15	35.03	35.88	36.82						
	40		E.	56.66	57.58	0.72	1.65	2.46						
	41	σ Sagittarii - - - -	D.	34.40	37.52	38.53	39.50	40.50	46 50.56	— 37.57	28.60	18 46 41.59	6.81	
	42		E.	59.90	0.89	3.86	4.72	5.78						
	43		B.	28.82	29.65	30.67	31.66	34.62						
	44	ο Sagittarii - - - -	C.	53.51	54.55	55.50	56.40	57.36	55 55.43	0.01	28.61	18 56 24.02	6.52	
	45		D.	16.22	19.19	20.22	21.13	21.98						
	46		B.	37.46	38.57	39.59	40.61	43.41						
	47	π Sagittarii - - - -	C.	1.93	3.06	4.08	5.05	5.87	1 4.02	— 0.01	28.61	19 1 32.62	6.45	
	48		D.	24.54	27.70	28.50	29.47	30.40						
	49		A.	2.70	3.61	4.41	7.22	8.30						
	50		B.	26.08	26.89	27.70	28.66	31.46						
	51	ω Aquilæ - - - - -	C.	49.10	50.03	50.80	51.73	52.62	10 50.98	+ 0.10	+28.63	19 11 19.71	— 5.12	
	52		D.	10.59	13.50	14.41	15.32	16.07						
	53		E.	33.92	34.67	37.47	38.26	39.09						

14. Through thick haze.
34. Unsteady.
Azimuth cor. for 26th and 28th from δ Ursæ Minoris and δ Aquilæ of 28th.

April 26. Image west $\overset{r.}{0.15}$. Clamp west.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m.	n.	c.
h.	s.	s.	s.	s.	s.
Apr. 26, 16.4	+ 28.56	— 0.042	+ 0.037	+ 0.133	— 0.036
28, 19.5	+ 28.65	+ 0.068	+ 0.078	+ 0.133	— 0.036

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	s.	s.	h. m. s.	s.	
	1		A.	15.58	16.37	17.31	20.11	21.05						
	2		B.	38.45	39.29	40.13	41.03	43.81						
Apr. 28	3	δ Aquilæ	C.	1.40	2.27	3.03	3.84	4.79	18 2.98	+ 0.08	+28.63	19 18 31.69	— 5.41	Y.
	4		D.	22.08	24.93	25.75	26.62	27.60						
	5		E.	44.94	45.81	48.58	49.40	50.26						
	6		B.	21.84	22.65	23.71	24.64	27.62						
	†7	h^2 Sagittarii	C.	47.00	47.88	48.80	49.84	50.76	27 48.87	— 0.02	28.64	19 28 17.49	6.47	
	8		D.	10.08	13.07	14.08	15.01	16.05						
	9		B.	47.40	48.24	49.27	50.18	52.93						
	10	γ Aquilæ	C.	10.54	11.51	12.42	13.27	14.12	39 12.42	+ 0.06	28.66	19 39 41.14	5.02	
	11		D.	32.03	34.71	35.67	36.55	37.48						
	12		A.	45.28	46.23	47.03	49.81	50.82						
	13		B.	8.69	9.51	10.40	11.30	14.04						
	14	α Aquilæ	C.	31.51	32.51	33.42	34.28	35.10	43 33.36	+ 0.09	28.66	19 44 2.12	5.10	
	15		D.	52.72	55.57	56.52	57.41	58.32						
	16		E.	15.90	16.78	19.55	20.27	21.10						
	17		C.	0.62	1.60	2.47	3.35	4.20						
	18	β Aquilæ	D.	21.84	24.51	25.42	26.34	27.28	48 25.03	—22.47	28.67	19 48 31.22	5.12	
	19		E.	44.91	45.64	48.21	49.08	50.00						
	20		A.	10.34	11.48	12.48	15.36	16.40						
	21		B.	35.05	36.05	36.94	37.89	40.92						
29	22	μ^1 Sagittarii	C.	59.32	0.34	1.24	2.31	3.23	5 1.32	— 0.10	28.94	18 5 30.16	— 6.77	R.
	23		D.	22.08	24.65	25.71	26.70	27.61						
	24		E.	46.28	47.28	50.16	51.09	52.07						
	25	δ Ursæ Minoris	C.	10.00	26.00	41.00	57.00	12.00	16 41.20	+ 2.31	28.92	18 17 12.43	+ 18.32	
	26	51 (Hev.) Cephei, S. P.	C.	26.00	5.00	48.50	30.00	12.00	33 48.30	— 2.92	28.89	6 34 14.27	— 35.44	
	27		A.	19.84	20.82	21.86	25.10	26.16						
	28		B.	45.50	46.57	47.48	48.45	51.48						
	29	σ Sagittarii	C.	10.79	12.01	13.00	13.92	14.94	46 12.92	0.12	28.87	18 46 41.66	6.85	
	30		D.	34.44	37.40	38.38	39.42	40.45						
	31		E.	59.83	0.83	3.84	4.72	5.74						
	32		B.	12.33	13.24	14.20	15.11	17.88						
	33	Lalande, 35468	C.	36.10	36.92	37.92	38.82	39.64	53 37.92	0.12	28.85	18 54 6.65	6.35	
	34		D.	57.90	0.71	1.77	2.68	3.61						
	35		A.	12.95	13.89	14 85	17.75	18.79						
	36		B.	37.38	38.47	39.38	40.38	43.23						
	37	π Sagittarii	C.	1.88	2.82	3.72	4.70	5.79	1 3.79	0.10	28.84	19 1 32.53	6.49	
	38		D.	24.44	27.25	28.31	29.29	30.22						
	39		E.	48.89	49.74	52.60	53.51	54.49						
	40		B.	17.32	18.30	19.29	20.28	23.44						
	41	B. A. C., 6611	C	42.62	43.69	44.69	45.60	46.58	12 44.74	0.16	28.82	19 13 13.40	6.68	
	42		D.	6.22	9.35	10.30	11.20	12.27						
	43		A.	15.50	16.42	17.31	19.82	20.78						
	44		B.	38.28	39.25	40.20	41.11	43.48						
	45	δ Aquilæ	C.	1.24	2.14	3.05	3.93	4.82	18 2.92	0.03	28.81	19 18 31.70	5.44	
	46		D.	22.02	24.83	25.74	26.61	27.52						
	47		E.	44.92	45.91	48.47	49.38	50.25						
	48		B.	21.59	22.60	23.62	24.63	27.70						
	49	h^2 Sagittarii	C.	46.82	47.83	48.71	49.73	50.72	27 48.80	0.15	28.79	19 28 17.43	6.51	
	50		D.	9.91	13.01	14.03	14.97	16.07						
	51		A.	58.43	59.40	0.25	3.24	4.33						
	52		B.	22.76	23.71	24.72	25.71	28.58						
	53	f Sagittarii	C.	47.10	48.07	49.10	50.09	50.98	37 48.94	— 0.10	+28.77	19 38 17.61	— 6.19	
	54		D.	9.29	12.11	13.13	14.10	15.10						
	55		E.	33.63	34.59	37.36	38.31	39.34						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
Apr. 29, 19.0	+ 28.85	— 0.111	— 0.030	+ 0.177	— 0.036

7. Dim. *r.*
April 28. 19*h.* 55*m.* Image west 0.19. Clamp west.
29. Azimuth cor. from δ Ursæ Minoris and 51 (Hev.) Cephei, S. P.

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	s.	s.	h. m. s.	s.	
	1		A.	1.68	2.65	3.61	6.72	7.72						
	2		B.	27.04	27.94	28.86	29.86	32.90						
Apr. 29	3	Moon's 2d Limb	C.	52.07	53.08	54.03	54.91	55.86	41 53.95	— 0.11	+28.76	19 42 22.61	- -	R.
	4		D.	15.32	18.07	19.08	19.98	20.98						
	5		E.	40.22	41.19	44.01	45.02	45.98						
	6		B	18.00	0.00	41.00	23.00	26.00						
30	†7	51 (Hev.) Cephei, S. P.	C.	25.00	4.00	46.00	27.00	9.50	33 45.53	- -	- -	- - - -	- -	Y.
	8		D.	5.50	6.00	48.00	31.00	13.00						
	9	B. A. C., 6428	E.	12.51	13.60	17.85	19.06	20.34	45 16.67	67.58	29.11	18 44 38.20	— 3.61	
	10	Lalande, 35468	E.	21.37	22.32	25.28	26.17	27.18	54 24.46	—46.83	29.10	18 54 6.73	6.38	
	11		B.	45.91	46.87	47.81	48.77	51.62						
	12	Weisse, 1547	C.	9.40	10.33	11.19	12.11	12.96	0 11.22	+ 0.03	29.10	19 0 40.36	6.17	
	13		D.	30.88	33.72	34.69	35.58	36.51						
	14		A.	2.24	3.22	4.12	6.83	7.88						
	15		B.	25.60	26.56	27.52	28.44	31.14						
	16	ω Aquilæ	C.	48.79	49.81	50.63	51.52	52.40	10 50.63	0.10	29.10	19 11 19.83	5.18	
	17		D.	10.22	12.92	13.93	14.82	15.80						
	18		E.	33.44	34.32	37.06	37.89	38.71						
	19		B.	51.76	52.66	53.59	54.52	57.19						
	20	Weisse, 315	C.	14.81	15.74	16.68	17.50	18.45	13 16.71	0.04	29.09	19 13 45.84	5.99	
	21		D.	36.19	39.09	39.90	40.88	41.71						
	22		A.	15.06	15.98	16.76	19.61	20.66						
	23		B.	38.11	38.93	39.85	40.70	43.42						
	24	δ Aquilæ	C.	0.86	1.79	2.62	3.43	4.33	18 2.58	+ 0.09	29.09	19 18 31.76	5.47	
	25		D.	21.77	24.61	25.50	26.39	27.21						
	26		E.	44.52	45.49	48.19	48.94	49.88						
	27		C.	46.55	47.55	48.44	49.41	50.44						
	28	h^2 Sagittarii	D.	9.63	12.71	13.77	14.68	15.67	28 13.25	—24.74	29.09	19 28 17.59	6.55	
	29		E.	34.92	35.82	38.78	39.69	40.68						
	30		A.	45.09	46.06	46.93	49.69	50.70						
	31		B.	8.25	9.18	10.06	10.93	13.72						
	32	α Aquilæ	C.	31.23	32.16	33.08	33.90	34.83	43 33.05	+ 0.10	29.08	19 44 2.22	5.17	
	33		D.	52.41	55.18	56.12	57.08	57.87						
	34		E.	15.52	16.41	19.09	19.90	20.78						
	35		A.	14.50	15.35	16.20	18.86	19.85						
	36	β Aquilæ	B.	37.60	38.40	39.24	40.19	42.86	47 39.57	22.64	29.08	19 48 31.29	5.19	
	37		C.	0.37	1.24	2.08	2.92	3.86						
	38		A.	6.49	7.52	8.48	11.27	12.30						
	39		B.	30.46	31.29	32.16	33.09	35.82						
May 2	40	δ Hydræ et Crateris	C.	53.76	54.71	55.70	56.51	57.45	11 55.59	0.09	30.51	11 12 26.19	5.61	
	41		D.	15.29	18.28	19.14	19.90	20.90						
	42		E.	38.90	39.83	42.61	43.51	44.34						
	43		B.	6.60	7.60	8.65	9.69	13.04						
	44	Lacaille, 4777	C.	34.18	35.33	36.35	37.52	38.70	25 36.52	0.01	30.50	11 26 7.03	5.64	
	45		D.	59.62	3.67	4.69	5.62	6.61						
	46		B.	32.85	33.81	34.73	35.53	38.38						
	47	B. A. C., 3940	C.	55.79	56.69	57.53	58.41	59.21	28 57.54	0.09	30.50	11 29 28.13	5.90	
	48		D.	16.86	19.40	20.38	21.35	22.21						
	†49	✡ (7.8) +6° 50′	B.	2.10	2.91	3.88	4.79	7.47	31 26.85	0.10	30.50	11 31 57.45	5.91	
	†50		D.	46.09	49.01	49.88	50.80	51.62						
	51		B.	4.61	5.49	6.46	7.38	10.40						
	†52	β Leonis	C.	28.26	29.24	30.28	31.18	32.02	41 30.22	+ 0.11	+30.49	11 42 0.82	— 5.97	
	53		D.	50.16	53.07	54.10	54.90	55.79						

7. Blurred.
49–50. Unsteady.
52. Stars unsteady.
Azimuth cor. for 29th, from δ Ursæ Minoris and 51 (Hev.) Cephei, S. P.
Azimuth cor. for 30th, from 51 (Hev) Cephei, S. P., and δ Aquilæ.

April 29. 19*h*. 50*m*. Image west 0. 12. Clamp west. Battery works badly.
30. 20*h*. 35*m*. Image west 0. 16. Clamp west.
Azimuth cor., May 2, from Polaris, S. P., and α Virginis.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m*.	*n*.	*c*.
h.	s.	s.	s.	s.	s.
Apr. 30, 19.5	+ 29.09	— 0.031	+ 0.090	+ 0.080	— 0.036
May 2, 12.3	+ 30.47	— 0.034	+ 0.120	+ 0.093	— 0.036

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	s.	s.	h. m. s.	s.	
	1		B.	0.00	15.00	30.00	45.00	25.00						
May 2	2	P. A. C, 4070	C.	57.00	11.50	26.00	40.00	54.00	57 27.29	+ 0.78	+30.48	11 57 58.55	— 22.70	Y.
	3		D.	28.50	- -	- -	40.00	55.00						
	4		C.	18.40	19.29	20.08	20.94	21.84						
	†5	η Virginis	D.	39.49	42.16	43.02	43.90	44.88	12 42.55	—22.32	30.47	12 12 50.70	6.01	
	6		E.	1.99	2.86	5.59	6.45	7.33						
	7		B.	8.16	9.06	10.06	10.86	13.63						
	8	Weisse, 360	C	31.09	32.08	32.93	33.85	34.81	21 33.01	+ 0.10	30.47	12 22 3.57	6.06	
	9		D.	52.59	55.25	56.11	56.89	57.79						
	10		B.	25.06	25.90	26.86	27.63	30.26						
	11	Weisse, 513	C.	47.54	48.50	49.50	50.46	51.35	30 49.56	0.09	30.46	12 31 20.11	6.08	
	12		D.	8.63	11.65	12.55	13.37	14.21						
	13	θ Virginis	B.	53.32	54.28	55.21	56.09	58.50	2 6.60	11.33	30.44	13 2 48.37	6.22	
	14		C.	15.99	16.89	17.71	18.61	19.41						
	15		B.	39.00	1.00	24.00	49.00	1.00						
	†16	Polaris, S. P.	C.	23.00	46.00	12.00	35.00	0.00	7 11.80	- -	- -	- - - -	- -	
	17		D.	21.00	33.00	0.00	23.00	50.00						
	18		B	0.07	0.96	1.90	2.84	5.46						
	†19	α Virginis	C.	23.33	24.36	25.24	26.08	26.96	17 25.09	0.07	30.44	13 17 55.59	6.34	
	20		D.	44.51	47.25	48.18	49.13	50.09						
	21		B.	46.64	47.41	48.30	49.30	52.21						
4	22	δ Leonis	C.	10.88	12.05	12.87	13.77	14.81	6 12.85	+ 0.03	32.56	11 6 45.45	6.03	
	23		D.	33.42	36.39	37.28	38.28	39.20						
	24		A.	4.89	5.88	6.79	9.58	10.70						
	25		B.	28.50	29.35	30.30	31.17	33.90						
	26	δ Hydræ et Crateris	C.	51.89	52.82	53.63	54.59	55.49	11 53.75	— 0.10	32.57	11 12 26.21	5.58	
	27		D.	13.50	16.38	17.30	18.19	19.10						
	28		E.	37.02	37.92	40.70	41.64	42.43						
	29	Weisse, 462	B.	22.68	23.61	24.61	25.55	28.41	26 36.17	+11.16	32.57	11 27 19.91	5.76	
	30		C.	45.54	46.47	47.37	48.31	49.19						
	31	Weisse, 466	C.	4.10	4.91	5.86	6.69	7.63	27 17.12	—11.33	32.57	11 27 38.35	5.77	
	32		D.	25.19	27.93	28.77	29.61	30.48						
	33	(5) Iris, —5° 19′	B	46.32	47.23	48.11	49.02	51.74	31 59.80	+11.17	32.57	11 32 43.54	5.79	
	34		C.	9.25	10.21	11.14	12.02	12.94						
	35	B. Z., 503, 11	C.	0.97	1.91	2.93	3.88	4.84	36 15.30	—12.30	32.57	11 36 35.57	6.11	
	36		D.	24.08	27.13	28.18	29.09	29.97						
	37		B.	52.67	53.62	54.67	55.59	58.55						
	38	93 Leonis	C.	17.09	18.12	19.11	19.93	20.90	40 19.01	+ 0.02	32.58	11 40 51.61	6.05	
	39		D	39.58	42.41	43.38	44.30	45.20						
	40	B. A. C., 4070	C.	56.00	9.00	23.00	38.00	50.50	57 23.30	0.12	32.58	11 57 59.01	22.24	
	41	Weisse, 91	B	5.24	6.17	7.13	8.09	10.77	6 18.64	11.23	32.58	12 7 2.45	5.99	
	42		C.	27.88	28.90	29.80	30.73	31.66						
	43	Weisse, 160	B	8.55	9.42	10.42	11.46	14.21	10 22.20	11.23	32.59	12 11 6.01	6.01	
	44		C.	31.70	32.73	33.60	34.52	35.38						
	45	Rumker, 3907	B	40.35	41.31	42.30	43.20	45.90	11 53.83	+11.24	32.59	12 12 37.66	6.01	
	46		C.	3.16	4.18	5.13	5.94	6.87						
	47	Rumker, 3911	C.	18.92	19.86	20.78	21.62	22.48	12 31.97	—11.32	32.59	12 12 53.24	6.01	
	48		D.	39.98	42.66	43.63	44.46	45.31						
	49	g 2d Comet, '52, +86° 4′	C.	- -	56.00	10.00	- -	36.00	19 14.00	1.29	32.59	12 19 45.30	19.20	
	50		C.	41.68	42.60	43.55	44 50	45.39						
	51	☿ (9) +3° 1′	D.	2 59	5.51	6.51	7.38	8.29	27 5.95	—22.49	+32.59	12 27 16.06	— 6.05	
	52		E.	25.40	26.31	27.93	29.88	30.79						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m.	n.	c.
h.	s.	s.	s.	s.	s.
May 2, 12.3	+ 30.47	— 0.034	+ 0.120	+ 0.093	— 0.036
4, 12.5	+ 32.59	+ 0.021	— 0.028	+ 0.239	— 0.036

5. Unsteady.
16. Very unsteady.
19. Very unsteady.
Azimuth cor., May 4, from Polaris, S. P., and θ Virginis.

May 2. 13*h*. 30*m*. Image west *r*. 0.20. Clp. west.

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s	s.	m. s.	s.	s.	h. m. s.	s.	
May 4	1	Weisse, 510	B.	13.09	13.91	14.88	15.80	18.26	30 26.35	+11.17	+32.59	12 31 10.11	— 6.06	Y.
	2		C.	35.69	36.53	37.58	38.46	39.31						
	3	Weisse, 513	D.	6.84	9.57	10.42	11.30	12.18	31 21.21	−33.69	32.59	12 31 20.11	6.07	
	4		E.	29.46	30.41	33.19	33.95	34.79						
	5	Weisse, 736	C.	5.12	6.11	6.95	7.85	8.70	43 18.15	11.21	32.60	12 43 39.54	6.06	
	6		D.	26.11	28.79	29.72	30.60	31.59						
	7	Weisse, 929	E.	42.22	43.23	45.89	46.86	47.79	54 45.20	46.14	32.60	12 54 31.65	6.08	
	†8	Weisse, 933	E.	59.84	0.84	3.70	4.49	5.32	55 2.84	46.14	32.60	12 54 49.29	6.10	
	9		B.	51.20	52.11	53.09	53.98	56.73						
	10	θ Virginis	C.	14.05	14.95	15.82	16.79	17.64	2 15.89	0.08	32.60	1 2 48.41	6.21	
	11		D.	35.14	37.88	38.81	39.64	40.50						
	12	Polaris, S. P.	C.	30.00	50.00	16.00	41.00	5.00	7 16.40	8.08	32.58	11 7 40.91	- -	
	13	B. A. C, 4479	C.	3.90	4.97	6.10	7.28	8.39	17 20.31	—14.07	32.61	13 17 38.85	6.09	
	14		D.	30.42	33.91	34.89	36.00	37.20						
	15		B.	10.84	12.08	13.23	14.51	18.13						
	16	B. A. C., 4519	C.	41.91	43.34	44.50	45.60	46.69	24 44.37	+ 0.14	32.61	13 25 17.12	6.08	
	17		D.	10.69	14.12	15.36	16.62	17.90						
	18	ζ Virginis	D.	26.48	29.40	30.25	31.14	32.03	27 40.98	—33.67	32.61	13 27 39.93	6.21	
	19		E.	49.28	50.29	52.78	53.69	54.51						
	20	Weisse, 674	B.	2.96	3.87	4.86	5.88	8.58	39 16.72	+11.35	32.62	13 40 0.68	6.44	
	21		C.	26.38	27.38	28.20	29.13	29.93						
	22		A.	17.52	18.59	19.40	22.12	23.22						
	23		B.	40.48	41.40	42.38	43.24	45.91						
	24	τ Virginis	C.	3.30	4.20	5.09	5.92	6.70	54 5.04	— 0.02	32.62	13 54 37.64	6.27	
	25		D.	24.19	26.96	27.80	28.62	29.59						
	26		E.	46.94	47.90	50.64	51.52	52.39						
	27	Groombridge, 2099	C.	32.00	47.00	1.50	15.00	30.00	4 1.10	+ 3.23	32.63	14 4 36.95	9.72	
8	28	✡ (8) +8° 40′	C.	52.19	53.16	54.03	54.98	55.80	54 54.03	— 0.03	36.56	11 55 30.56	5.86	
	29	B. A. C., 4070	C.	52.00	6.50	19.50	34.00	48.00	57 20.00	+ 1.44	36.56	11 57 58.01	21.03	
	30		C.	23.21	24.32	25.31	26.21	27.09						
	31	ε Corvi	D.	45.89	48.89	49.89	50.87	51.69	2 49.39	—24.24	36.56	12 3 1.70	5.92	
	32		E.	10.47	11.47	14.29	15.12	16.10						
	33	Weisse, 91	D.	45.02	47.82	48.71	49.70	50.55	6 59.62	33.81	36.56	12 7 2.37	5.95	
	34		E.	8.06	8.81	11.67	12.48	13.39						
	35		B.	49.50	50.46	51.30	52.20	54.91						
	36	η Virginis	C.	12.20	13.17	14.07	14.96	15.81	12 14.08	0.05	36.55	12 12 50.59	5.95	
	37		D.	33.22	36.09	36.90	37.80	38.62						
	38	Weisse, 359	C.	23.23	24.19	25.04	25.91	26.79	21 36.33	—11.32	36.55	12 21 51.56	6.00	
	39		D.	44.32	47.16	48.08	48.85	49.74						
	40	Weisse, 463	B.	12.73	13.62	14.60	15.51	18.18	27 26.15	+11.18	36.55	12 28 13.89	6.02	
	41		C.	35.49	36.52	37.44	38.30	39.16						
	42	Weisse, 519	B.	36.20	37.16	38.10	38.91	41.82	30 49.97	+11.56	36.55	12 31 38.08	6.03	
	43		C.	59.65	0.65	1.51	2.39	3.35						
	44	✡ (10) +14° 31′	C.	16.17	17.07	17.90	18.81	19.73	31 17.94	— 0.02	36.55	12 31 54.46	6.03	
	45	Weisse, 526	C	25.52	26.40	27.31	28.17	28.93	31 38.82	—11.59	36.55	12 32 3.77	6.03	
	46		D.	46.80	49.87	50.76	51.72	52.69						
	47	✡ (9) +13° 0′	B.	34.52	35.48	36.40	37.37	40.09	59 48.32	+11.48	36.53	13 0 36.34	6.07	
	48		C.	58.08	59.04	59.88	0.77	1.62						
	49	Weisse, 1038	C.	3.49	4.51	5.47	6.34	7.28	0 16.91	—11.52	36.53	13 0 41.92	6.07	
	50		D.	25.08	27.93	28.80	29.68	30.50						
	51	Weisse, 69	E.	47.19	48.11	51.01	51.86	52.70	5 50.17	—45.86	36.53	13 5 40.84	6.08	
	52	Weisse, 104	B.	36.57	37.48	38.40	39.28	42.08	6 50.23	+11.44	+36.53	13 7 38.20	— 6.09	
	53		C.	59.91	0.81	1.71	2.60	3.48						

8. Dim.
Azimuth cor. for May 8 from Polaris and α Virginis.
May 4. 14*h*. 20*m*. Image west *r*. 0. 17. Clamp west.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m*.	*n*.	*c*.
h. May 8, 13.5	s. + 36.52	s. — 0.026	s. — 0.013	s. + 0.131	s. — 0.036

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
May 8	1	Polaris, S. P.	B.	35.00	58.00	21.00	46.00	57.00	7 10.40	- -	- -	- - - -	- -	Y.
	2		D.	24.00	34.00	58.00	23.00	48.00						
	3	Weisse, 181	C.	10.51	11.42	12.30	13.21	14.15	11 23.57	— 11.27	+36.53	13 11 48.83	— 6.19	
	4		D.	31.41	34.39	35.30	36.11	36.95						
	5		B.	54.20	55.08	55.93	56.88	59.63						
	6	α Virginis	C.	17.22	18.16	19.10	19.98	20.74	17 19.11	0.07	36.53	13 17 55.56	6.31	
	7		D.	38.61	41.46	42.34	43.23	44.10						
	8	Weisse, 461	D.	44.18	47.10	48.01	48.88	49.73	27 47.58	22.63	36.52	13 28 1.47	6.15	
	9	Weisse, 472	D.	2.39	5.20	6.09	6.91	7.81	28 16.94	33.91	36.52	13 28 19.56	6.15	
	10		E.	25.40	26.25	28.90	29.80	30.70						
	11	✡ (9) +7° 15′	E.	59.05	59.91	2.69	3.46	4.33	29 1.89	45.18	36.52	13 28 53.22	6.15	
	12		B.	4.49	5.50	6.43	7.32	10.21						
	13	η Bootis	C.	28.58	29.46	30.45	31.42	32.36	47 30.51	— 0.01	36.51	13 48 7.02	6.05	
	14		D.	50.78	53.78	54.74	55.64	56.54						
	15		B.	31.03	34.67	38.62	43.10	54.50						
	†16	o 2d Comet, '52, +76° 58′	C.	11.89	15.61	19.87	24.20	27.63	53 19.76	+ 0.38	36.51	13 53 56.66	6.59	
	17		D.	44.79	56.64	0.80	4.87	8.23						
	18		B.	24.33	26.61	28.78	31.16	37.60						
	19	ς 2d Comet, '52, +66° 14′	C.	20.59	23.13	25.49	27.32	29.85	1 25.41	+ 0.19	36.51	14 2 2.12	5.93	
	20		D.	13.08	19.87	22.31	24.42	26.69						
	21	✡ (9) — 3° 9′	C.	12.07	12.91	13.82	14.73	15.50	22 24.99	— 11.28	36.50	14 22 50.20	6.41	
	22		D.	32.89	35.67	36.53	37.41	38.35						
	23	Weisse, 503	B.	11.11	12.03	12.94	13.87	16.61	27 24.52	+ 11.19	36.50	14 28 12.21	6.46	
	24		C.	33.88	34.84	35.70	36.70	37.50						
	25	Weisse, 668	B.	6.10	6.98	7.89	8.81	11.56	36 19.50	11.21	36.49	14 37 7.20	6.50	
	26		C.	28.87	29.88	30.75	31.70	32.51						
	27	Weisse, 759	B.	21.29	22.24	23.29	24.20	26.82	40 34.89	+ 11.28	36.49	14 41 22.66	6.52	
	28		C.	44.39	45.35	46.25	47.12	47.92						
	29	α^2 Libræ	D.	58.55	1.43	2.37	3.27	4.11	43 13.52	— 34.95	36.49	14 43 15.05	6.77	
	30		E.	22.20	23.10	25.89	26.70	27.59						
	31		C.	30.29	33.83	37.22	40.54	43.80						
	32	β Ursæ Minoris	D.	49.85	0.38	3.76	7.09	10.45	53 2.23	—1 24.69	36.49	14 51 14.03	4.99	
	33		E.	16.50	19.87	30.10	33.28	36.61						
	34	Weisse, 1129	B.	20.61	21.53	22.42	23.32	25.98	59 33.92	+ 11.16	36.48	15 0 21.57	6.37	
	35		C.	43.26	44.21	45.10	45.96	46.85						
	36	Weisse, 1150	C.	47.81	48.75	49.71	50.61	51.56	1 1.30	— 11.61	36.48	15 1 26.17	6.77	
	37		D.	9.57	12.31	13.31	14.18	15.18						
	38		B.	34.03	34.84	35.79	36.74	39.40						
	39	β Libræ	C.	56.99	57.90	58.77	59.70	0.52	8 58.82	— 0.07	36.48	15 9 35.23	6.62	
	40		D.	18.27	20.91	21.90	22.80	23.71						
	41		B.	41.91	42.93	43.98	44.95	47.87						
9	42	δ Leonis	C.	6.41	7.40	8.30	9.30	10.21	6 8.35	0.00	36.97	11 6 45.33	5.96	R.
	43		D.	28.87	31.90	32.82	33.74	34.71						
	44		B.	53.47	54.51	55.41	56.48	59.94						
	45	✡ (9) +36° 15′	C.	21.58	22.58	23.59	24.56	25.69	13 23.69	+ 0.03	36.97	11 14 0.69	6.27	
	46		D.	47.59	50.82	51.95	53.01	54.16						
	47		B.	50.87	52.31	53.49	54.77	58.62						
	48	58 Ursæ Majoris	C.	22.70	24.17	25.27	26.41	27.48	22 25.20	+ 0.05	36.97	11 23 2.22	6.49	
	49		D.	51.99	55.52	56.91	58.21	59.31						
	50		B.	50.77	51.87	52.90	53.90	56.78						
	51	υ Leonis	C.	13.99	14.92	15.80	16.72	17.60	29 15.74	— 0.03	+36.97	11 29 52.67	— 5.75	
	52		D.	34.86	37.62	38.54	39.43	40.36						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h. May 8, 13.5	s. + 36.52	s. — 0.026	s. — 0.013	s. + 0.131	s. — 0.036

16. Good observation.

May 8. 15*h*. 15*m*. Image west *r.* 0.10. Clamp west.

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DATE.	Number.	OBJECT.	Set	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	s.	s.	h. m. s.	s.	
	1		B.	53.49	54.50	55.50	56.60	59.43						
May 9	2	B. Z., 500, 130 - -	C.	19.31	20.41	21.35	22.39	23.28	32 21.21	+ 0.01	+36.97	11 32 58.20	— 6.07	R.
	3		D.	42.70	45.88	46.84	47.80	48.73						
	4		B.	47.07	48.09	49.17	50.19	53.08						
	5	Rumker, 3738 - - -	C.	12.30	13.30	14.22	15.32	16.27	39 14.25	0.00	36.97	11 39 51.23	6.04	
	6		D.	35.24	38.43	39.39	40.34	41.31						
	7		B.	47.04	47.91	48.87	49.81	52.21						
	†8	B. A. C., 4020 - - -	C.	9.49	10.47	11.38	12.31	13.32	46 11.52	— 0.04	36.97	11 46 48.45	5.70	
	9		D.	30.57	33.48	34.40	35.31	36.26						
	†10	B. Z., 358, 30, +36° 12′	D.	56.59	59.90	1.11	2.27	3.39	49 14.48	41.63	36.97	11 49 9.83	6.23	
	†11		E.	24.73	25.77	29.38	30.31	31.37						
	12		B.	58.44	59.41	0.35	1.29	4.18						
	13	ε Corvi - - - - -	C.	22.73	23.77	24.67	25.72	26.70	2 24.79	0.08	36.97	12 3 1.69	5.91	
	14		D.	45.55	48.29	49.29	50.24	51.27						
	15		B.	0.74	1.63	2.62	3.51	5.94						
	16	Weisse, 91 - - - -	C.	23.23	24.25	25.19	26.22	27.19	6 25.27	0.02	36.97	12 7 2.12	5.94	
	17		D.	44.51	47.06	47.98	49.07	49.97						
	18		B.	49.06	49.98	50.91	51.88	54.68						
	†19	η Virginis - - - -	C.	11.93	12.88	13.71	14.56	15.50	12 13.71	0.03	36.97	12 12 50.64	5.94	
	20		D.	32.83	35.62	36.47	37.34	38.30						
	21	20 Comæ - - - - -	B.	43.32	44.36	45.30	46.31	49.41	22 9.98	0.00	36.97	12 22 46.96	6.07	
	22		D.	30.78	33.67	34.61	35.58	36.50						
	23		B.	14.48	15.42	16.34	17.26	19.81						
	†24	✡ +3° 5′ - - - -	C.	37.21	38.21	39.21	40.27	41.22	26 39.22	0.03	36.97	12 27 16.16	6.01	
	25		D.	58.23	1.16	2.16	3.17	4.16						
	26		C.	41.12	42.22	43.16	44.07	44.95						
	27	Weisse, 513 - - -	D.	2.37	4.99	6.00	6.93	7.84	31 5.51	22.46	36.97	12 31 20.02	6.02	
	28		E.	24.99	25.97	28.39	29.35	30.30						
	29		C.	0.31	1.42	2.39	3.38	4.29						
	30	δ Virginis - - - -	D.	21.36	24.29	25.24	26.20	27.19	48 24.80	22.49	36.97	12 48 39.27	6.04	
	31		E.	44.38	45.26	47.82	48.75	49.67						
	32		B.	27.31	28.27	29.21	30.08	32.42						
	33	B. A. C., 4363 - - -	C.	50.17	51.16	52.07	52.89	53.81	53 51.92	0.03	36.97	12 54 28.85	6.13	
	34		D.	10.91	13.72	14.64	15.61	16.51						
	35		B.	46.60	47.59	48.54	49.52	52.23						
	36	θ Virginis - - - -	C.	9.48	10.38	11.30	12.29	13.29	2 11.41	0.04	36.97	13 2 48.34	6.18	
	37		D.	30.77	33.36	34.29	35.29	36.28						
	38	Polaris, S. P. - - -	C.	25.00	48.00	9.00	31.00	54.00	7 9.40	- -	- -	- - - -	- -	
	39		C.	56.82	57.74	58.63	59.58	0.41						
	40	B. A. C., 4462 - - -	D.	17.54	20.80	21.64	22.53	23.44	13 21.14	22.53	36.97	13 13 35.57	6.13	
	41		E.	40.60	41.62	44.28	45.25	46.22						
	42		B.	59.39	0.29	1.24	2.18	4.41						
	43	Weisse, 294 - - -	C.	22.22	23.18	24.17	25.09	25.90	18 23.95	0.04	36.97	13 19 0.88	6.23	
	44		D.	42.89	45.72	46.61	47.53	48.46						
	45		B.	38.07	39.09	40.05	40.97	43.61						
	46	ζ Virginis - - - -	C.	1.21	2.21	3.22	4.14	5.17	27 2.95	0.03	36.96	13 27 39.88	6.19	
	47		D.	21.91	24.69	25.64	26.66	27.57						
	48		A.	28.73	29.62	30.64	33.35	34.45						
	49		B.	52.47	53.49	54.40	55.32	58.17						
15	†50	β Leonis - - - - -	C.	16.14	17.08	17.98	18.89	19.81	41 17.93	— 0.18	+42.95	11 42 0.70	— 5.85	
	51		D.	37.88	40.70	41.62	42.51	43.41						
	52		E.	1.41	2.38	4.97	5.94	6.95						

8. Preceded by a smaller star.
10–11. Preceded by a larger star.
19. Rather unsteady.
24. Taken for Weisse, 463.
50. Steady.
Azimuth cor., May 9, from Polaris, S. P., and δ Virginis.

	r.	
May 9.	Image west 0.09.	Clamp west. First part of the night very fine.
13.	Image west 0.29.	Clamp west.
15h.	Image west 0.34.	Clamp east. After which changed level slightly.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m.	n.	c.
h.	s.	s.	s.	s.	s.
May 9, 12.2	+ 36.97	— 0.004	+ 0.001	+ 0.101	—0.036

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DATE.	Number.	OBJECT.	Set	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	s.	s.	h. m. s.	s.	
	1		B.	56.51	57.53	58.68	59.71	3.13						
May 15	†2	B. Z., 358, 29 - - -	C.	4.76	5.80	6.91	7.90	9.08	48 6.91	— 0.18	+42.95	11 48 49.67	— 6.17	R.
	3		D.	30.70	34.19	35.21	36.21	37.27						
	4		B.	3.10	3.96	4.98	5.90	8.55						
	5	B. A. C., 4080 - - -	C.	25.93	26.90	27.78	28.67	29.50	59 27.77	0.22	42.95	12 0 10.49	5.92	
	6		D.	46.92	49.78	50.61	51.51	52.40						
	7		B.	52.51	53.49	54.51	55.44	58.37						
	8	ε Corvi - - - - -	C.	16.90	17.97	18.99	19.98	20.93	2 18.98	0.26	42.95	12 2 1.67	5.89	
	9		D.	39.66	42.46	43.54	44.46	45.46						
	10		C.	33.43	34.40	35.39	36.40	37.34						
	11	B. A. C., 4184 - - -	D.	56.54	59.49	0.48	1.42	2.42	18 0.06	24.86	42.95	12 18 18.15	6.05	
	12		E.	21.57	22.54	25.54	26.44	27.52						
	13		B.	37.78	38.74	39.70	40.70	43.55						
	14	20 Comæ - - - - -	C.	2.22	3.27	4.28	5.26	6.27	22 4.22	0.20	42.95	12 22 46.97	6.04	
	15		D.	24.74	27.76	28.71	29.70	30.68						
	16		A.	34.36	35.32	36.29	39.18	40.21						
	17		B.	59.19	0.18	1.11	2.13	5.06						
	18	β Corvi - - - - -	C.	23.82	24.70	25.61	26.60	27.63	26 25.68	0.23	42.95	12 27 8.41	6.10	
	19		D.	46.43	49.39	50.31	51.35	52.30						
	20		E	11.09	12.11	14.93	15.90	16.89						
	21		B	5.27	6.25	7.27	8.24	11.21						
	22	B. Z., 409, 45, +33° 48′	C.	32.17	33.25	34.24	35.27	36.28	29 34.28	0.19	42.95	12 30 17.05	6.10	
	23		D.	57.53	1.04	2.03	2.96	4.07						
	24		B.	40.92	41.85	42.76	43.71	46.38						
	25	θ Virginis - - - -	C.	3.72	4.68	5.60	6.52	7.39	2 5.60	0.23	42.95	13 2 48.32	6.18	
	26		D.	24.74	27.59	28.50	29.38	30.30						
	27		B.	28.11	29.11	30.03	30.93	33.51						
	28	B. A. C., 4462 - - -	C.	51.06	51.98	52.93	53.84	54 74	12 52.86	0.22	42.95	13 13 35.59	6.14	
	29		D.	12.07	14.70	15.72	16.61	17.56						
	30		B.	32.57	33.51	34.41	35.32	38.14						
	31	ζ Virginis - - - -	C.	55.36	56.27	57.24	58.19	59.06	26 57.17	0.23	42.95	13 27 39.90	6.21	
	32		D.	16.22	18.91	19.87	20.82	21.71						
	33		B.	1.37	2.38	3.31	4.30	6.70						
	34	85 Virginis - - - -	C.	24.70	25.66	26.60	27.57	28.54	37 26.73	— 0.25	42.95	13 38 9.44	6.52	
	35		D.	46.53	49.38	50.36	51.28	52.27						
	36		A.	28.24	29.25	30.24	32.68	33.72						
	37		B.	51.88	52.89	53.87	54.74	57.60						
16	38	β Leonis - - - - -	C.	15.52	16.45	17.42	18.35	19.30	41 17.36	+ 0.02	43.35	11 42 0.73	5.84	
	39		D.	37.26	40.07	40.95	41.87	42.90						
	40		E.	0.73	1.76	4.53	5.44	6.36						
	41		B.	58.24	59.22	0.13	1.07	3.54						
	42	B. A. C., 4055 - - -	C.	20.82	21.80	22.72	23.70	24.55	53 22.78	— 0.01	43.35	11 54 6.11	6.03	
	43		D.	41.87	44.58	45.50	46.43	47.47						
	44		B.	51.92	52.86	53.82	54.76	57.64						
	45	ε Corvi - - - - -	C	16.33	17.31	18.28	19.29	20.29	2 18.33	0.02	43.34	12 3 1.65	5.88	
	46		D.	39.11	41.90	42.86	43.81	44.73						
	47		B.	45.21	46.18	47.15	48.10	50.62						
	48	Rumker, 3911 - - -	C.	8.14	9.16	10.07	10.91	11.85	12 10.00	0.01	43.34	12 12 53.33	5.93	
	49		D.	29.08	31.64	32.67	33.68	35.58						
	50		B.	37.18	38.15	39.21	40.17	42.78						
	51	20 Comæ - - - - -	C.	1.70	2.63	3.65	4.60	5.53	22 3.66	— 0.02	+43.33	12 22 46.97	— 6.03	
	52		D.	24.40	27.21	28.22	29.25	30.21						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m.	n.	c.
h.	s.	s	s.	s.	s.
May 15, 12.5	+ 42.95	+ 0.003	— 0.192	+ 0.072	— 0.036

2. Preceded by a star to northward.

May 15. Image east 0.12. Clamp west.
Beautiful night; work interrupted by officious visitors.

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Date.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	s.	s.	h. m. s.	s.	
	1		B.	58.57	59.46	0.50	1.48	4.40						
May 16	2	β Corvi - - - - -	C.	23.15	24.09	25.10	26.10	27.04	26 25.16	— 0.02	+43.33	12 27 8.47	— 6.10	R.
	3		D.	25.94	48.88	49.86	50.90	51.89						
	4		B.	16.07	16.99	17.92	18.86	21.34						
	5	Weisse, 497 - - -	C.	39.60	40.62	41.51	42.39	43.40	29 41.36	0.01	43.33	12 30 24.67	6.00	
	6		D.	1.08	3.64	4.70	5.70	6.59						
	7		B.	17.62	18.76	19.74	20.68	23.17						
	8	Weisse, 584 - - -	C.	40.69	41.61	42.60	43.52	44.43	34 42.50	0.01	43.32	12 35 25.81	6.02	
	9		D.	1.48	4.30	5.35	6.29	7.22						
	10		B.	22.24	23.21	24.13	25.12	28.02						
	11	Weisse, 646 - - -	C.	45.61	46.52	47.52	48.41	49.40	37 47.55	0.01	43.32	12 38 30.86	6.02	
	12		D.	7.13	10.00	10.98	11.98	12.99						
	13		B.	30.94	31.90	32.90	33.89	36.68						
	14	δ Virginis - - - -	C.	53.81	54.71	55.62	56.53	57.42	47 55.67	0.01	43.32	12 48 38.97	6.03	
	15		D.	14.75	17.51	18.48	19.44	20.42						
	16		B.	20.80	21.71	22.68	23.58	26.30						
	17	B. A. C., 4363 - - -	C.	43.59	44.52	45.41	46.37	47.25	53 45.48	0.01	43.31	12 54 28.79	6.12	
	18		D.	4.70	7.39	8.40	9.32	10.25						
	19	θ Virginis - - - -	B.	40.46	41.35	42.30	43.29	45.94	2 5.15	0.01	43.31	13 2 48.44	6.18	
	20		D.	24.25	26.99	28.06	28.95	29.88						
	21		B.	43.22	44.10	44.98	45.91	48.41						
	22	Weisse, 294 - - -	C.	15.71	16.62	17.56	18.42	19.39	18 17.64	0.01	43.30	13 19 0.93	6.24	
	23		D.	36.84	39.49	40.39	41.37	42.25						
	24	ζ Virginis - - - -	C.	54.63	55.59	56.49	57.47	58.36	27 7.80	11.22	43.30	13 27 39.87	6.21	
	25		D.	15.68	18.61	19.50	20.37	21.29						
	26		A.	21.30	22.26	23.24	25.71	26.72						
	27		B.	44.24	45.21	46.21	47.13	49.60						
17	28	υ Leonis - - - - -	C.	6.97	7.87	8.80	9.68	10.50	29 8.78	0.09	43.81	11 29 52.49	5.70	
	29		D.	28.10	30.58	31.48	32.34	33.30						
	30		E.	50.75	51.70	54.35	55.25	56.19						
	31		B.	40.51	41.45	42.50	43.39	46.41						
	32	Rumker, 3738 - - -	C.	5.49	6.41	7.35	8.32	9.30	39 7.43	0.07	43.80	11 39 51.16	5.97	
	33		D.	28.44	31.52	32.45	33.43	34.42						
	34		B.	51.04	51.98	52.89	53.82	56.50						
	35	B. A. C., 4021 - - -	C.	13.52	14.63	15.55	16.43	17.48	46 15.66	0.11	43.80	11 46 59.35	5.84	
	36		D.	34.92	37.69	38.54	39.47	40.43						
	37	B. Z, 358, 30, +36° 13′	D.	49.51	53.20	54.37	55.41	56.42	49 7.64	41.70	43.80	11 49 9.75	6.15	
	38		E.	17.93	19.18	22.43	23.50	24.49						
	†39	67 Ursæ Majoris - - -	D.	48.79	52.39	53.52	54.54	55.67	55 8.56	46.65	43.80	11 55 5.71	6.26	
	†40		E	20.50	21.53	25.21	26.25	27.24						
	†41		A.	27.12	28.17	29.10	31.88	32.89						
	†42		B.	51.57	52.49	53.62	54.54	57.59						
	†43	ε Corvi - - - - -	D.	38.80	41.46	42.57	43.49	44.51	2 18.04	0.14	43.79	12 2 1.69	5.87	
	†44		E.	3.22	4.13	6.80	7.93	8.93						
	45		D.	27.69	30.42	31.33	32.31	33.27	18 42.13	33.85	43.78	12 18 52.07	5.95	
	46	Rumker, 3966 - -	E.	50.40	51.41	53.88	54.86	55.78						
	47		B.	10.34	11.29	12.21	13.10	15.60						
	48	✡ +5° 30′ - - - -	C.	32.90	33.86	34.81	35.74	36.68	23 34.88	0.11	43.78	12 24 18.55	5.97	
	49		D.	54.07	56.67	57.75	58.65	59.59						
	50		B.	3.79	4.87	6.03	7.39	10.32						
	†51	B. Z., 409, 45 - - -	C.	31.57	32.70	33.75	34.70	35.71	29 33.55	— 0.05	+43.78	12 30 17.28	— 6.03	
	52		D.	56.60	59.70	0.86	2.06	3.22						

39–40. Several stars in field; observed largest.
41–44. Rather unsteady.
51. Dim.
Azimuth cor. for May 17 and 22 from Polaris, S. P., and α Virginis of 22d.
May 16. Night good; battery weak.
Image west 0.03. Clamp west.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m.	n.	c.
h.	s.	s.	s.	s.	s.
May 16, 12.6	+ 43.33	— 0.031	+ 0.022	— 0.002	— 0.036
17, 12.0	+ 43.79	— 0.031	— 0.090	+ 0.125	— 0.036

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DATE.	Number.	OBJECT.	Set	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	s.	s.	h. m. s.	s.	
	1		A.	8.84	9.73	10.71	13.54	14.44						
	2		B.	31.58	32.52	33.50	34.40	37.07						
May 17	† 3	γ^1 Virginis - - - -	C.	54.48	55.40	56.32	57.28	58.21	33 56.33	— 0.10	+43.78	12 34 40.01	— 5.97	R.
	4		D.	15.46	18.32	19.29	20.28	21.24						
	5		E.	38.39	39.31	41.79	42.63	43.63						
	6		B.	59.13	0.87	2.39	3.91	7.58						
	7	11 Can. Venaticorum - -	C.	34.32	35.63	37.22	38.49	39.82	41 37.09	0.00	43.77	12 42 20.87	6.25	
	8		D.	5.94	10.55	12.12	13.64	14.79						
	9		C.	33.91	34.88	35.71	36.64	37.51						
	10	Weisse, 223 - - -	D.	55.21	57.92	58.93	59.88	0.85	13 58.58	22.98	43.76	13 14 19.35	6.31	
	11		E.	18.52	19.44	22.18	23.07	23.99						
	12		B.	47.15	48.19	49.20	50.15	53.24						
	13	✡ + 27° 56′ - - -	C.	12.89	13.93	14.93	15.98	17.02	21 14.93	0.06	43.75	13 21 58.61	6.01	
	14		D.	36.44	39.72	40.77	41.68	42.61						
	15		B	4.60	5.49	6.48	7.40	10.21						
	16	Weisse, 501 - - -	C.	27.45	28.44	29.33	30.30	31.25	29 29.32	0.13	43.75	13 30 12.93	6.29	
	17		D.	48.35	51.18	52.13	53.12	54.03						
	18		B.	0.39	1.30	2.29	3.30	5.75						
	19	85 Virginis - - - -	C.	23.91	24.80	25.80	26.65	27.61	37 25.80	— 0.16	43.74	13 38 9.38	6.52	
	20		D.	45.85	48.30	49.38	50.39	51.30						
	21		A.	9.24	10.82	12.33	16.42	18.09						
	22		B.	45.07	46.50	47.78	49.53	53.08						
	23	η Ursæ Majoris - - -	C.	20.37	21.92	23.43	24.70	26.33	41 23.15	+ 0.04	43.74	13 42 6.94	5.90	
	24		D.	52.78	57.15	58.54	0.23	1.29						
	25		E.	28.31	29.61	33.79	35.02	36.41						
22	†26	Polaris, S. P. - - -	C.	17.00	42.00	9.00	30.00	54.00	7 6.40	- -	- -	- - - -	- -	
	27		B.	41.67	42.52	43.50	44.42	47.31						
	28	α Virginis - - - -	C.	4.81	5.80	6.66	7.54	8.51	17 6.67	— 0.17	49.06	13 17 55.56	6.29	
	29		D.	26.09	28.97	29.88	30.71	31.60						
	30		B.	50.70	51.70	52.61	53.60	56.12						
	†31	✡ (7) —1° 36′ - - -	C.	13.58	14.51	15.46	16.30	17.28	23 15.40	0.15	49.07	13 24 4.31	6.21	
	32		D.	34.43	37.12	38.22	39.19	40.12						
	33		B.	26.32	27.25	28.18	29.10	31.69						
	34	ζ Virginis - - - -	C.	48.94	49.90	50.81	51.78	52.63	26 50.87	0.15	49.07	13 27 39.79	6.18	
	35		D.	10.11	12.70	13.63	14.57	15.43						
	36		B.	55.03	55.98	56.98	57.87	0.81						
	37	85 Virginis - - - -	C.	18.67	19.69	20.60	21.57	22.44	37 20.61	0.18	49.07	13 38 9.50	6.50	
	38		D.	40.40	43.30	44.29	45.29	46.22						
	39		B.	24.19	25.16	26.04	26.90	29.62						
	40	τ Virginis - - - -	C.	47.04	47.93	48.81	49.64	50.54	53 48.79	0.14	49.07	13 53 37.72	6.27	
	41		D.	7.85	10.67	11.60	12.50	13.38						
	42		B.	28.66	29.70	30.69	31.63	34.48						
	43	B. A. C., 4691 - - -	C.	52.43	53.40	54.33	55.33	56.27	58 54.36	0.18	49.07	13 59 43.25	6.63	
	44		D.	14.16	17.17	18.19	19.09	20.02						
	45		A.	40.38	41.40	42.33	45.14	46.12						
	46		B.	4.20	5.13	6.18	7.11	9.70						
	47	B. A. C., 4700 - - -	C.	27.73	28.74	29.68	30.64	31.61	2 29.71	0.15	49.08	14 3 18.63	6.66	
	48		D.	49.56	52.49	53.49	54.41	55.33						
	49		E.	13.24	14.22	16.97	17.96	18.88						
	50		B.	55.01	55.91	56.84	57.77	0.40						
	51	B. A. C., 4769 - - -	C.	17.96	18.90	19.86	20.81	21.70	16 19.81	— 0.13	+49.08	14 17 8.75	— 6.28	
	52		D.	39.07	41.81	42.74	43.75	44.61						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
May 17, 12.0	+ 43.79	— 0.031	— 0.090	+ 0.125	— 0.036
22, 14.1	+ 49.08	+ 0.015	— 0.111	+ 0.125	— 0.036

3. Unsteady.
26. Unsteady.
31. Preceded and followed by stars.

May 17. Image west $\overset{r}{0.02}$. Clamp west.

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
	1		B.	5.88	6.83	7.71	8.59	11.41						
May 22	2	B. A. C., 4773	C.	28.82	29.75	30.70	31.54	32.49	16 30.64	— 0.13	+49.08	14 17 19.59	— 6.24	R.
	3		D.	49.91	52.59	53.52	54.42	55.42						
	4		B.	34.28	35.30	36.26	37.19	39.69						
	5	Weisse, 423	C.	57.15	58.17	59.12	0.09	0.93	22 59.14	0.16	49.08	14 23 48.07	6.51	
	6		D.	18.28	21.26	22.20	23.10	24.14						
	7		C.	16.71	17.61	18.51	19.39	20.29						
	8	Weisse, 668	D.	37.62	40.31	41.33	42.28	43.28	36 40.92	22.68	49.08	14 37 7.33	6.56	
	9		E.	0.42	1.48	3.94	4.89	5.81						
	10		B.	0.61	1.54	2.52	3.49	6.51						
	11	α^2 Libræ	C.	24.31	25.32	26.28	27.30	28.23	42 26.25	0.18	49.09	14 43 15.15	6.86	
	12		D.	46.13	49.03	49.92	50.81	51.73						
	13		A.	41.14	42.20	43.20	46.22	47.30						
	14		B.	6.70	7.63	8.62	9.57	12.60						
	†15	Moon's 1st Limb	C.	31.98	33.02	33.90	34.88	35.84	49 33.87	0.18	49.09	14 50 22.78	- -	
	16		D.	55.20	58.25	59.27	0.24	1.23						
	17		E.	20.38	21.32	24.31	25.38	26.33						
	18		A.	19.01	20.09	21.10	24.07	25.15						
	19		B.	44.18	45.18	46.22	47.28	50.23						
	20	20 Libræ	C.	9.11	10.18	11.17	12.17	13.22	55 11.26	0.18	49.09	14 56 0.18	7.26	
	21		D.	32.48	35.41	36.45	37.40	38.38						
	22		E.	57.53	58.53	1.33	2.33	3.38						
	23		A.	42.63	43.61	44.51	47.25	48.38						
	24		B.	6.81	7.82	8.72	9.67	12.68						
	25	ι^1 Libræ	C.	30.93	32.02	32.97	33.87	34.85	3 32.85	0.16	49.09	15 4 21.78	7.09	
	26		D.	53.13	55.89	56.85	57.79	58.69						
	27		E.	17.38	18.32	21.18	22.18	23.10						
	28		B.	21.50	22.39	23.50	24.41	27.13						
	29	β Libræ	C.	44.39	45.31	46.29	47.25	48.22	8 46.37	0.17	49.09	15 8 35.30	6.74	
	30		D.	5.81	8.41	9.39	10.31	11.30						
	31		A.	10.45	11.36	12.19	15.01	15.92						
	32		B.	33.50	34.46	35.40	36.21	38.89						
23	33	θ Virginis	C.	56.37	57.37	58.18	59.11	59.89	1 58.13	0.17	50.43	13 2 48.39	6.13	Y.
	34		D.	17.42	20.19	21.09	21.98	22.90						
	35		E.	40.31	41.19	43.78	44.68	45.49						
	36	Polaris, S. P.	B.	33.00	56.00	20.00	45.00	56.00	7 8.00	- -	- -	- - - -	- -	
	37		D.	19.00	32.00	56.00	20.00	43.00						
	38	B. A. C., 4433	D.	2.56	6.21	7.33	8.53	9.62	7 21.67	44.58	50.43	13 7 27.52	5.96	
	39		E.	32.68	33.80	37.54	38.67	39.77						
	40	B. A. C., 4536	E.	40.84	42.07	45.70	46.75	47.87	28 44.65	56.82	50.44	13 28 38.26	5.93	
	41		A.	26.44	27.41	28.40	31.18	32.23						
	42		B.	50.73	51.63	52.58	53.56	56.52						
	43	η Bootis	C.	14.81	15.81	16.67	17.62	18.48	47 16.67	0.09	50.45	13 48 7.03	6.03	
	44		D.	37.01	39.89	40.83	41.73	42.62						
	45		E.	1.21	2.06	4.90	5.78	6.71						
	46		B.	19.81	20.77	21.70	22.69	25.74						
	47	Rumker, 4545	C.	44.50	45.50	46.39	47.33	48.30	53 46.42	0.12	50.45	13 54 36.76	5.99	
	48		D.	7.23	10.14	11.11	12.10	13.07						
	49		B.	25.60	26.50	27.50	28.41	31.08						
	50	Arg. Z., 206, 32	C.	49.26	50.19	51.13	52.03	52.91	2 51.14	0.24	50.46	14 3 41.36	6.69	
	51		D.	11.11	13.91	14.90	15.83	16.71						
	52		B.	54.93	55.86	56.83	57.82	0.66						
	53	Lalande, 26210	C.	19.11	20.07	20.89	21.84	22.80	12 20.94	— 0.24	+50.46	14 13 11.16	— 6.81	
	54		D.	41.18	44.16	45.03	46.04	46.89						

15. Good observation.
Azimuth cor., for May 23, from Polaris, S. P., and θ Virginis.
May 22. Image $\overset{r.}{0.00}$. Clamp west. Very good night.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m.	n.	c.
h. May 23, 14.9	s + 50.48	s. + 0.029	s. — 0.148	s. + 0.171	s. — 0.036

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s	s.	h. m. s.	s.	
May 23	1	Weisse, 423	C.	55.83	56.81	57.70	58.65	59.49	22 57.70	— 0.20	+50.47	14 23 47.96	— 6.51	Y.
	2	Weisse, 503	C.	20.20	21.22	22.10	22.97	23.84	27 22.07	0.20	50.47	14 28 12.33	6.53	
	3	Weisse, 606	C.	51.07	51.95	52.82	53.64	54.52	32 52.80	0.20	50.47	14 33 43.07	6.56	
	4	Weisse, 668	C.	15.21	16.20	17.08	17.92	18.80	36 17.04	0.20	50.47	14 37 7.31	6.57	
	5	α^2 Libræ	D.	44.83	47.61	48.57	49.58	50.46	42 59.79	— 35.10	50.48	14 43 15.17	6.86	
	6		E.	8.39	9.42	12.18	13.02	13.86						
	7		A.	22.71	26.32	29.45	39.64	43.78						
	8		B.	49.98	53.53	56.84	59.89	10.51						
	9	β Ursæ Minoris	C.	16.02	19.62	22.84	26.51	29.88	50 22.95	+ 0.42	50.48	14 51 13.85	4.67	
	10		D.	35.86	46.48	49.99	52.89	56.31						
	11		E.	2.20	5.49	16.09	18.86	22.10						
	12	20 Libræ	D.	31.09	34.30	35.31	36.28	37.20	55 47.07	— 37.27	50.48	14 56 0.29	7.27	
	13		E.	56.23	57.24	60.14	1.02	1.91						
	14		B.	5.41	6.39	7.40	8.39	11.29						
	15	ι^1 Libræ	C.	29.61	30.71	31.60	32.52	33.43	3 31.57	0.25	50.48	15 4 21.81	7.10	
	16		D.	52.00	54.82	55.71	56.68	57.64						
	17		B.	1.60	2.46	3.40	4.29	6.97						
	18	5 Serpentis	C.	24.47	25.40	26.21	27.13	28.02	11 26.20	— 0.18	50.49	15 12 16.52	6.46	
	19		D.	45.22	48.18	49.01	49.89	50.76						
	20		B.	37.11	39.21	41.21	43.21	49.44						
	21	B. A. C., 5091	C.	28.81	31.08	32.87	35.02	36.96	19 32.89	+ 0.12	50.50	15 20 23.50	4.80	
	22		D.	16.31	22.42	24.61	26.42	28.61						
	23		B.	35.19	36.22	37.12	38.08	40.89						
	24	Lalande, 28453	C.	59.13	0.10	1.01	1.85	2.81	30 0.97	— 0.24	50.50	15 30 51.23	7.12	
	25		D.	21.15	23.89	24.80	25.74	26.62						
	26		B.	50.05	50.93	51.77	52.74	55.44						
	27	Weisse, 620	C.	12.72	13.76	14.61	15.50	16.44	32 14.61	0.19	50.50	15 33 4.92	6.59	
	28		D.	33.78	36.53	37.43	38.35	39.12						
	29		B.	13.60	14.46	15.48	16.42	19.10						
	30	α Serpentis	C.	36.57	37.56	38.41	39.21	40.10	36 38.38	0.16	50.50	15 37 28.72	6.34	
	31		D.	57.70	0.42	1.31	2.23	3.11						
	32		B.	13.25	14.37	15.37	16.39	19.40						
	33	π Scorpii	C.	38.62	39.66	40.62	41.57	42.51	49 40.61	0.27	50.51	15 50 30.85	7.58	
	34		D.	1.89	4.91	5.97	6.82	7.87						
	35		B.	54.02	55.09	56.11	57.17	0.07						
	36	δ Scorpii	C.	18.90	19.88	20.79	21.76	22.63	51 20.76	0.26	50.51	15 52 11.01	7.42	
	37		D.	41.48	44.49	45.42	46.32	47.28						
	38		A.	56.30	57.30	58.38	1.44	2.51						
	39		B.	22.32	23.34	24.38	25.33	28.59						
	40	Moon's 1st Limb	C.	48.34	49.28	50.22	51.22	52.21	55 50.21	0.24	50.51	15 56 40.48	- -	
	41		D.	11.97	15.24	16.20	17.10	18.10						
	42		E.	37.95	38.90	41.91	42.86	43.82						
	43		A.	27.74	28.73	29.81	32.79	33.70						
	44		B.	53.86	54.78	55.82	56.79	59.86						
	45	Moon's 2d Limb	C.	19.79	20.74	21.69	22.69	23.59	58 21.65	0.24	50.51	15 59 11.92	- -	
	46		D.	43.40	46.51	47.50	48.60	49.67						
	47		E.	9.51	10.41	13.45	14.36	15.37						
	48		B.	52.41	53.28	54.13	55.00	57.75						
	49	δ Ophiuchi	C.	15.13	16.10	16.88	17.80	18.69	6 16.97	0.19	50.52	16 7 7.30	6.67	
	50		D.	36.21	38.93	39.88	40.78	41.63						
	51		B.	31.20	32.21	33.27	34.29	37.21						
	52	σ Scorpii	C.	56.42	57.48	58.38	59.39	0.40	11 58.41	— 0.27	+50.52	16 12 48.66	— 7.63	
	53		D.	19.70	22.61	23.54	24.54	25.47						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
May 23, 14. 9	+ 50. 48	+ 0. 029	— 0. 148	+ 0. 171	— 0. 036

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s	s.	
	1		B.	39.77	40.74	41.78	42.77	45.88						
May 23	2	α Scorpii - - - - -	C.	5.09	6.15	7.09	8.10	8.97	20 7.11	— 0.27	+50.52	16 20 57.36	— 7.69	Y.
	3		D.	28.40	31.54	32.50	33.44	34.43						
	4		B.	11.12	12.04	12.89	13.71	16.61						
25	†5	α Serpentis - - - -	C.	33.94	35.01	35.85	36.80	37.60	37 35.88	0.15	— 6.98	15 37 28.75	6.37	
	6		D.	55.06	57.98	58.92	59.91	0.79						
	7		B.	40.29	41.12	42.11	42.93	45.78						
	8	θ Libræ - - - - -	C	3.84	4.88	5.71	6.60	7.50	46 5.78	0.21	6.97	15 45 58.60	7.18	
	9		D.	25.77	28.72	29.59	30.48	31.40						
	10		B.	29.38	30.30	31.16	32.12	34.87						
	†11	51 Libræ - - - - -	C.	52.59	53.59	54.31	55.23	56.13	56 54.40	0.20	6.95	15 56 47.26	6.97	
	12		D.	14.03	16.70	17.63	18.62	19.42						
	13	o 1st Comet '50, +69° 33′	E.	42.86	45.50	53.30	55.75	58.40	1 51.16	2 8.03	6.94	15 59 36.19	3.96	
	14	p 1st Comet '50, +69° 33′	E.	4.88	7.70	15.07	17.44	19.93	2 13.00	2 8.03	6.94	15 59 58.03	3.96	
	15		C.	25.28	28.19	30.71	33.58	36.10						
	16	Groombridge, 2319 -	D.	29.09	37.49	39.80	42.21	44.81	6 4.73	33.62	6 93	16 5 24.18	3.78	
	17	✡ (9) +70° 38′ - -	E.	46.89	49.72	57.47	0.09	2.98	7 55.43	—2 14.88	6.93	16 5 33.62	3.77	
	18		B.	35.93	38.81	41.56	44.37	52.77						
	19	h 1st Comet '50, +71° 6′	C.	46.68	49.33	51.94	55.11	57.57	15 52.20	+ 0.20	6.92	16 15 45.48	3.58	
	20		D.	51.62	0.24	3.21	5.81	8.06						
	21		B.	37.11	38.21	39.21	40.12	43.30						
	22	α Scorpii - - - - -	C.	2.58	3.59	4.49	5.52	6.46	21 4.56	— 0.25	6.91	16 20 57.40	7.73	
	23		D.	25.88	29.00	29.98	31.01	31.89						
	24		B.	23.72	24.63	25.68	26.69	29.78						
	25	B. A. C., 5600 - - -	C.	49.18	50.35	51.30	52.28	53.35	35 51.34	— 0.25	6.88	16 35 44.21	7.83	
	26		D.	12.91	16.09	17.07	18.05	19.08						
	†27	B. A. C., 5622 - - -	B.	14.34	15.42	16.32	17.41	20.51	39 29.90	+ 12.80	6.88	16 39 35.83	— 8.07	
	†28		C.	41.17	42.09	42.95	43.93	44.88						
	29	ε Ursæ Minoris - - -	A.	39.15	46.35	52.57	13.08	20.08	55 58.25	+5 34.35	6.84	16 55 25.75	+ 0.84	
	†30	Moon's 2d Limb - -	C.	3.11	4.20	5.26	6.34	7.16	13 17.99	— 13.04	6.80	18 12 58.15	- -	
	†31		D.	26.93	30.23	31.32	32.20	33.17						
	32	δ Ursæ Minoris - - -	C.	52.00	8.00	22.00	37.00	51.50	20 31.15	3 7.18	6.71	18 17 17.25	+ 13.15	
	33		D.	47.00	30.00	46.00	2.00	16.00						
	34		B.	41.49	42.58	43.51	44.52	47.69						
	35	φ Sagittarii - - - -	C.	7.09	8.10	9.12	10.12	11.14	37 9.15	0.25	6.68	18 37 2.21	— 7.70	
	36		D.	30.74	33.71	34.82	35.82	36.80						
	37		B.	37.06	38.14	39.21	40.29	43.48						
	38	β Lyræ - - - - -	C.	4.27	5.43	6.50	7.57	8.42	45 6.43	0.08	6.67	18 44 59.68	5.09	
	39		D.	29.26	32.69	33.72	34.72	35.65						
	40	σ Sagittarii - - - -	E.	36.24	37.35	40.20	41.20	42.21	47 39.44	50.28	6.67	18 46 42.49	7.62	
	41	B. A. C., 6537 - - -	C.	23.52	24.52	25.55	26.47	27.45	0 38.60	13.33	6.64	19 0 18.62	7.83	
	42		D.	47.80	51.16	52.21	53.18	54.12						
	43		B.	2.19	3.10	4.10	4.90	7.71						
	44	ω Aquilæ - - - - -	C.	25.36	26.31	27.19	28.13	28.94	11 27.23	0.14	6.63	19 11 20.46	5.85	
	45		D.	46.70	49.52	50.51	51.42	52.34						
	46		B.	14.68	15.66	16.58	17.42	20.06						
	47	δ Aquilæ - - - - -	C.	37.44	38.39	39.21	40.11	40.90	18 39.25	0.16	6.61	19 18 32.47	6.15	
	48		D.	58.38	1.14	1.96	2.92	3.89						
28	†49	Polaris, S. P. - - -	B.	26.00	49.00	12.00	36.00	47.00	22 58.00	- -	- -	- - - -	- -	
	50	α Virginis - - - -	C.	55.59	56.52	57.38	58.38	59.20	18 20.16	22.79	1.81	13 17 55.55	6.29	
	51		E.	40.03	40.90	43.60	44.52	45.45						
	52		B.	15.41	16.40	17.40	18.23	20.89						
	53	B. A. C., 4560 - - -	C	38.81	39.85	40.66	41.64	42.47	33 40.66	— 0.02	— 1.78	13 33 38.86	— 6.42	
	54		D.	0.29	3.10	4.00	4.93	5.85						

5. Before observation, put clock forward one minute.
11. Double.
27–28. Dim.
30–31. Through clouds.
49. Unsteady.

r.
May 23. 16*h*. 45*m*. Image 0.00. Clamp west. Stars very steady.
25. 17*h*. 50*m*. Image 0.00. Clamp west. Cloudy.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m*.	*n*.	*c*.
h.	s.	s.	s.	s.	s.
May 25, 17.8	— 6.76	+ 0.099	— 0.133	+ 0.152	— 0.036

Hosted by Google

DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
May 28	1	B. Z, 466, 45, +36° 22′	D.	17.46	20.93	22.21	23.24	24.29	45 35.58	— 41.69	— 1.75	13 44 52.14	— 5.87	Y.
	2		E.	45.97	47.19	50.48	51.52	52.54						
	3		B.	14.76	15.74	16.71	17.54	20.20						
	4	τ Virginis	C.	37.48	38.49	39.33	40.28	41.10	54 39.37	0.00	1.73	13 54 37.63	6.29	
	5		D.	58.50	1.24	2.20	3.10	3.91						
	6	✡ (9) —4° 31′	B.	30.71	31.60	32.54	33.44	36.14	9 44.11	+ 11.23	1.70	14 9 53.64	6.46	
	7		C.	53.50	54.44	55.25	56.29	57.20						
	8	Weisse, 171	B.	15.88	16.82	17.72	18.61	21.45	10 29.36	+ 11.23	1.70	14 10 38.89	6.47	
	9		C.	38.92	39.73	40.56	41.58	42.39						
	10	Weisse, 174	C.	44.84	45.72	46.72	47.62	48.43	10 57.93	— 11.26	1.70	14 10 44.97	6.47	
	11		D.	5.81	8.70	9.57	10.49	11.39						
	12	w 1st Comet '50, +49° 10′	C.	44.09	45.51	46.67	47.92	49.16	24 46.67	+ 0.03	1.67	14 24 45.04	5.56	
	13	Weisse, 519	D.	20.52	23.47	24.34	25.21	- -	29 34.91	— 33.41	1.66	14 28 59.85	6.51	
	14		E.	43.70	44.63	47.10	47.94	48.82						
	15		B.	28.82	29.75	30.67	31.64	34.22						
	16	Weisse, 608	C	51.92	52.88	53.78	54.67	55.53	33 53.84	0.02	1.65	14 33 52.17	6.72	
	17		D.	13.48	16.21	17.14	17.98	18.88						
	18	Weisse, 759	C	22.43	23.41	24.32	25.25	26.18	41 35.62	11.30	1.63	14 41 22.69	6.64	
	19		D.	43.58	46.42	47.25	48.23	49.12						
	20		B.	22.29	23.12	24.11	24.86	27.60						
	21	Weisse, 787	C	45.22	46.17	47.07	47.90	48.72	42 47.00	0.02	1.63	14 42 45.36	6.65	
	22		D.	6.41	9.08	9.94	10.80	11.73						
	23	Weisse, 872	C.	41.97	42.85	43.70	44.65	45.59	46 55.15	11.22	1.62	14 46 42.31	6.49	
	24		D.	3.21	6.09	6.98	7.81	8.61						
	25	Weisse, 874	E.	28.99	29.82	32.76	33.61	34.47	47 31.93	44.80	1.62	14 46 45.51	6.49	
	†26	B. Z, 473, +44° 0′	C.	2.51	3.62	4.80	6.18	7.19	53 20.47	— 15.57	1.60	14 53 3.30	5.56	
	†27		D.	31.67	35.34	36.51	37.78	39.12						
	28	Weisse XIV, —1129	B.	58.80	59.70	0.52	1.44	4.20	0 12.15	+ 11.20	1.59	15 0 21.77	6.51	
	29		C.	21.66	22.43	23.40	24.27	25.12						
	30		B.	34.41	35.29	36.16	36.97	39.80						
	31	Weisse, 1142	C.	57.15	58.08	58.91	59.89	0.69	0 58.96	— 0.01	1.59	15 0 57.37	6.51	
	32		D.	18.24	20.81	21.76	22.71	23.61						
	33	✡ (8 9) +0° 29′	D.	46.88	49.41	50.49	51.30	52.15	2 1.24	33.61	1.58	15 1 26.04	6.51	
	34		E.	9.67	10.49	13.06	14.08	14.88						
	35		B.	20.49	21.37	22.28	23.19	25.83						
	36	Weisse, 210	C.	43.81	44.92	45.83	46.70	47.58	12 45.74	— 0.03	1.55	15 12 44.17	6.97	
	37		D.	5.55	8.37	9.26	10.09	10.90						
	38		B.	25.08	26.14	27.27	28.21	31.32						
	39	α Coronæ Borealis	C.	50.81	51.91	52.91	53.90	54.88	28 52.90	+ 0.03	1.52	15 28 51.42	5.87	
	40		D.	14.53	17.70	18.69	19.60	20.59						
	41	Weisse, 620	C.	4.92	5.86	6.70	7.68	8.44	33 17.88	— 11.22	1.52	15 33 5.15	6.65	
	42		D.	25.81	28.58	29.40	30.28	31.12						
	43	α Serpentis	C	28.43	29.49	30.46	31.34	32.22	37 41.65	11.29	1.51	15 37 28.85	— 6.40	
	44		D.	49.58	52.46	53.22	54.19	55.12						
29	45	Polaris, S. P.	C.	13.00	33.00	0.00	25.00	48.00	7 59.80	5.67	— 0.43	1 7 54.56	+ 5.53	R.
	46		A.	7.05	7.95	8.92	11.45	12.51						
	47		B.	30.18	31.15	32.10	33.10	35.55						
	48	α Virginis	C.	53.54	54.45	55.38	56.32	57.21	17 55.25	0.11	+ 0.46	13 17 55.60	+ 6.28	
	49		D.	14.63	17.60	18.55	19.49	20.41						
	50		E.	37.79	38.81	41.47	42.40	43.32						
	51		B.	25.71	26.75	27.68	28.58	31.28						
	52	✡ (8) —1° 36′	C	48.51	49.60	50.49	51.41	52.31	25 50.49	— 0.11	+ 0.48	13 25 50.86	— 6.21	
	53		D.	9.60	12.48	13.44	14.29	15.24						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m.	n.	c.
h. May 28, 14.6	s. + 1.64	s. + 0.133	s. + 0.029	s. + 0.079	s. — 0.036

26–27. Several stars in the field.

May 28. 15h. 45m. Image west 0.10 (r). Clamp west.
Azimuth cor., for May 28, from Polaris, S. P., and α Virginis.

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
	1		B	16.50	17.53	18.40	19.42	22.30						
May 29	2	B. Z., 462, 49, +25° 59′	C.	41.71	42.75	43.75	44.78	45.85	37 43.68	— 0.02	+ 0.52	13 37 44.17	— 5.95	R.
	3		D.	4.92	7.66	8.80	9.82	10.98						
	4		B	17.20	18.20	19.13	20.20	22.83						
	5	B. A. C., 4691 - - -	C.	40.95	41.94	42.88	43.81	44.90	59 42.85	0.16	0.58	13 59 43.27	6.65	
	6		D.	2.66	5.48	6.52	7.51	8.51						
	7		B.	34.03	35.10	36.00	37.07	40.13						
	8	B. A. C., 4719 - - -	C	59.82	0.84	1.81	2.87	4.06	7 1.93	0.21	0.60	14 7 2.32	7.08	
	9		D.	23.70	26.79	27.85	28.86	29.93						
	10		C.	33.75	34.71	35.70	36.78	37.68						
	11	✡ (9) +6° 28′ - - -	D.	54.85	57.53	58.52	59.49	0.43	17 58.11	— 22.64	0.63	14 17 36.11	6.27	
	12		E.	17.60	18.51	20.98	22.05	23.06						
	13		A.	57.58	58.59	59.57	2.91	4.00						
	14		B	24.23	25.21	26.25	27.25	30.62						
	15	ρ Bootis - - - - - -	C.	50.85	51.76	52.72	53.73	54.72	25 52.82	+ 0.03	0.66	14 25 53.51	5.85	
	16		D.	15.43	18.48	19.53	20.51	21.58						
	17		E.	41.69	42.82	45.81	46.90	47.95						
	18		D.	2.54	5.49	6.69	7.82	8.89						
	19	σ Bootis - - - - - -	E.	28.92	29.97	33.01	34.05	35.03	29 19.24	— 38.93	0.67	14 28 40.95	5.89	
	20		B	3.41	4.40	5.38	6.31	8.82						
	21	108 Virginis - - - -	C	26.43	27.35	28.28	29.26	30.23	38 28.18	0.10	0.69	14 38 28.77	6.42	
	22		D.	47.35	50.00	50.91	51.80	52.81						
	23		A.	25.45	26.38	27.32	29.80	31.07						
	24		B	49.10	50.08	51.10	52.11	54.81						
	25	α^2 Libræ - - - - - -	C.	12.82	13.78	14.65	15.63	16.61	43 14.63	0.13	0.71	14 43 15.21	6.90	
	26		D.	34.38	37.32	38.28	39.29	40.29						
	27		E.	58.18	59.18	1.76	2.71	3.60						
	28		C.	8.12	9.26	10.28	11.28	12.48						
	†29	✡ —27° 47′ - - -	D.	31.73	35.00	36.09	37.13	38.12	46 35.58	— 25.53	0.72	14 46 10.76	7.43	
	30		E.	57.67	58.67	1.70	2.70	3.75						
	31		B.	28.81	30.32	31.52	32.52	36.04						
	32	B. Z., 473, +44° 1′ -	C	59.92	1.30	2.60	3.78	4.97	53 2.68	+ 0.05	0.74	14 53 3.47	5.55	
	33		D.	29.17	33.06	34.23	35.37	36.59						
	34		B	50.52	51.48	52.50	53.40	55.90						
	†35	Σ Cat. Gen., 1683 - -	C.	13.29	14.36	15.32	16.29	17.18	57 15.29	0.09	0.75	14 57 15.95	6.36	
	36		D.	34.42	37.11	38.20	39.28	40.17						
	37		B.	1.43	2.33	3.38	4.31	7.05						
	38	ι^2 Libræ - - - - - -	C	25.52	26.46	27.40	28.39	29.34	5 27.41	0.17	0.77	15 5 28.01	7.13	
	39		D.	47.65	50.50	51.51	52.48	53.44						
	40		B.	8.71	11.41	13.80	16.51	22.81						
	41	A Z. N., 116, 71 - -	C.	7.41	10.44	12.71	15.31	17.41	12 12.77	+ 0.26	0.79	15 12 13.82	4.66	
	42		D.	2.51	9.60	12.09	14.32	16.48						
	43		B	16.10	17.10	18.05	19.07	21.90						
	44	B. A. C., 5117 - - -	C.	41.18	42.12	43.10	44.05	45.11	25 43.10	— 0.19	0.83	15 25 43.74	7.50	
	45		D.	4.11	7.20	8.19	9.18	10.11						
	46		A.	56.97	57.98	59.09	2.42	3.49						
	47		B.	23.08	24.18	25.22	26.23	29.11						
	48	α Coronæ Borealis - -	C	48.71	49.70	50.62	51.63	52.69	28 50.67	+ 0.01	0.84	15 28 51.52	5.87	
	49		D.	12.39	15.36	16.46	17.46	18.42						
	50		E.	37.83	39.07	41.80	42.87	43.95						
	51		B.	7.35	9.61	11.61	13.68	20.41						
	†52	✡ (10) Comet '61, +66° 14′	C.	3.48	6.60	8.79	10.61	12.65	37 8.35	+ 0.24	+ 0.86	15 37 9.46	— 4.46	
	53		D.	56.18	2.73	4.81	7.22	9.52						

29. Three stars in the field; observed middle one. Preceding is larger; following less.
35. Double, as one star.
52. Poor observation.
Azimuth cor., of May 29, 30, and 31, from Polaris of those dates.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m.	n.	c.
h.	s	s.	s.	s.	s.
May 29, 14.7	+ 0.70	+ 0.175	— 0.072	+ 0.178	— 0.036
21.1	+ 1.49	+ 0.123	-	-	-

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
	1		C.	47.87	50.34	52.49	54.57	56.98						
May 29	2	A. Z. N., 116, 120 - -	D.	40.22	45.82	49.05	51.41	53.55	45 48.13	— 55.48	+ 0.89	15 44 53.54	— 4.38	R.
	3		E.	36.60	38.95	45.58	47.51	51.08						
	4		C.	16.55	18.71	20.84	22.68	24.91						
	5	A. Z N., 116, 121 - -	D.	8.03	15.55	17.34	19.32	21.51	46 16.63	55.49	0.89	15 45 22.04	4.36	
	6		E.	5.43	7.74	13.71	16.26	18.91						
	7		A.	34.19	35.31	36.31	38.89	40.12						
	8		B.	58.55	59.50	0.43	1.41	4.29						
	† 9	β^1 Scorpii - - - - -	C.	22.82	23.88	24.79	25.74	26.76	57 24.62	0.14	0.92	15 57 25.40	7.38	
	10		D.	45.04	47.98	48.95	49.96	50.93						
	11		E.	8.81	9.88	12.60	13.70	14.61						
	12		C.	37.29	38.35	39.25	40.23	41.19						
	13	32 Vulpeculæ - - - -	D.	1.12	3.97	4.95	6.06	7.09	49 4.51	- -	- -	- - - -	- -	
	14		E.	26.45	27.45	30.42	31.39	32.46						
	15		B.	33.95	34.95	35.91	36.87	39.95						
	16	ζ Cygni - - - - -	C.	59.95	1.08	2.15	3.36	4.30	7 2.14	- -	- -	- - - -	- -	
	17		D.	24.09	27.29	28.32	29.48	30.48						
	18		B.	51.17	52.05	52.95	53.90	56.40						
	19	β Aquarii - - - -	C	13.78	14.78	15.68	16.63	17.59	24 15.79	- -	- -	- - - -	- -	
	20		D.	35.03	37.75	38.81	39.72	40.69						
	21		A.	25.62	26.59	27.57	30.51	31.50						
	22		B.	49.34	50.41	51.38	52.34	55.05						
	23	Moon's 2d Limb - -	C.	12.95	13.94	14.84	15.70	16.55	55 14.84	0.11	1.59	21 55 16.32	- -	
	24		D.	34.62	37.58	38.59	39.53	40.45						
	25		E.	58.28	59.19	1.97	2.81	3.71						
30	26	Weisse, 1038 - - -	D.	58.13	1.00	2.04	2.93	3.82	1 12.99	34.52	3.32	13 0 41.79	5.98	Y.
	27		E.	21.41	22.40	25.13	26.07	26.94						
	28		B.	16.82	17.75	18.63	19.58	22.20						
	29	h Encke's Comet, +13° 1′	C.	40.05	41.01	41.95	42.90	43.83	4 41.99	0.04	3.33	13 4 45.29	5.99	
	30		D.	1.61	4.44	5.39	6.40	7.30						
	31	Weisse, 104 - - -	C.	32.81	33.71	34.68	35.66	36.52	7 46.24	11.50	3.34	13 7 38.08	— 6.01	
	32		D.	54.40	57.29	58.30	59.12	59.91						
	33	Polaris, S. P. - - -	A.	45.00	7.00	32.00	46.00	4.00	30 29.40	22 34.72	3.34	1 7 58.02	+ 4.85	
	34		B.	25.00	49.00	4.00	37.00	45.00						
	35		B.	44.29	45.39	46.41	47.30	49.98						
	36	Weisse, 208 - - -	C.	7.70	8.60	9.40	10.31	11.11	13 9.48	0.04	3.35	13 13 12.78	— 6.03	
	37		D.	29.00	31.81	32.80	33.65	34.40						
	38		B.	27.19	28.21	29.09	30.05	32.76						
	39	α Virginis - - - -	C.	50.50	51.38	52.22	53.23	54.12	17 52.25	— 0.11	3.36	13 17 55.50	6.27	
	40		D.	11.71	14.39	15.32	16.32	17.28						
	41	k 2d Comet '52, +80° 46′	C.	30.84	37.20	41.94	47.98	53.11	28 42.21	+ 0.83	3.39	13 28 46.43	6.30	
	42	o 2d Comet '52, +76° 58′	C.	43.76	48.06	51.28	55.63	59.39	53 51.62	+ 0.57	3.45	13 53 55.64	5.25	
	43	✡ (9) —4° 33′ - - -	C.	48.64	49.54	50.41	51.32	52.11	10 1.66	— 11.34	3.48	14 9 53.80	6.42	
	44		D.	9.66	12.42	13.28	14.19	15.03						
	45	Weisse, 171 - - -	C.	33.80	34.63	35.48	36.35	37.38	10 46.82	11.34	3.48	14 10 38.96	6.46	
	46		D.	54.87	57.52	58.48	59.37	0.28						
	47	Weisse, 174 - - -	C.	39.82	40.73	41.61	42.45	43.32	10 52.87	— 11.34	3.48	14 10 45.02	6.47	
	48		D.	1.08	3.52	4.47	5.42	6.29						
	49	✡ (9) —3° 7′ - - -	B.	22.18	23.15	24.08	24.98	27.86	22 35.63	+ 11.14	3.51	14 22 50.28	6.48	
	50		C.	45.09	45.99	46.80	47.63	48.50						
	51	Weisse, 422 - - -	B.	15.11	16.06	16.88	17.75	20.60	23 28.52	+ 11.14	+ 3.51	14 23 43.17	— 6.49	
	52		C.	38.05	38.84	39.78	40.65	41.48						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
May 30, 15.1	+ 3.61	+ 0.137	— 0.041	+ 0.178	— 0.036

9. Unsteady.

May 29. 16*h*. 10*m*. Image west *r*. 0.08. Clamp west.

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
May 30	1	*u* 1st Comet '50, +50° 56′	C.	2.98	4.58	5.72	7.29	8.60	27 23.67	— 17.67	+ 3.52	14 27 9.53	— 5.52	Y.
	2		D.	36.20	40.68	41.97	43.70	45.01						
	3	Arg. Z, 301, 47	C.	52.41	53.37	54.19	55.17	56.08	35 6.51	12.42	3.54	14 34 57.63	7.15	
	4		D.	15.10	18.18	19.22	20.22	21.16						
	5	Arg. Z., 301, 48	C.	28.46	29.48	30.31	31.25	32.15	35 42.62	12.42	3.54	14 35 33.75	7.15	
	6		D.	51.30	54.44	55.37	56.29	57.19						
	7		A.	11.12	12.08	12.98	15.79	16.74						
	8	α^1 Libræ	C.	58.49	59.45	0.27	1.26	2.13	43 0.27	0.08	3.56	14 43 3.75	6.89	
	9		E.	43.75	44.77	47.63	48.39	49.21						
	10		B.	46.25	47.11	48.14	49.01	51.89						
	11	α^2 Libræ	C.	9.93	10.85	11.70	12.65	13.51	43 11.75	0.13	3.56	14 43 15.18	6.90	
	12		D.	31.76	34.51	35.41	36.30	37.20						
	13	✲ (8.9) +43° 54′	D.	29.48	33.52	34.81	35.99	37.18	52 34.20	— 31.04	3.58	14 52 6.74	5.55	
	14	B. Z., 473, +44° 0′	B.	25.57	26.71	28.13	29.12	33.25	52 44.14	+ 15.66	3.58	14 53 3.38	5.55	
	15		C.	57.39	58.50	59.57	1.05	2.16						
	†16	B. Z., 473, +43° 55′	C.	1.24	2.32	3.62	4.92	5.89	54 19.12	— 15.48	3.58	14 54 7.22	5.54	
	†17		D.	30.10	34.04	35.19	36.39	37.50						
	18	Weisse, 1131	D.	41.70	44.68	45.42	46.30	47.20	0 45.06	22.50	3.60	15 0 26.16	6.51	
	19	Weisse, 1142	D.	12.99	15.71	16.68	17.61	18.39	1 16.28	22.50	3.60	15 0 57.38	6.52	
	20		B.	6.97	7.96	8.87	9.70	12.47						
	21	β Libræ	C.	30.08	31.06	31.88	32.79	33.62	9 31.89	0.11	3.61	15 9 35.39	6.80	
	22		D.	51.18	54.09	55.05	55.87	56.72						
	23		B.	27.63	28.60	29.42	30.30	33.21						
	24	Weisse, 249	C.	51.17	52.04	53.00	53.87	54.70	14 52.97	0.12	3.63	15 14 56.48	7.02	
	25		D.	12.84	15.71	16.53	17.35	18.18						
	26		B.	28.96	29.92	30.89	31.77	34.69						
	27	41 Libræ	C.	53.08	53.98	55.05	56.00	56.79	30 54.99	0.14	3.67	15 30 58.52	7.28	
	28		D.	15.39	18.12	19.11	20.10	21.04						
	29		B.	44.50	45.49	46.48	47.31	50.09						
	†30	*d* Irene, —17° 15′	C.	8.13	9.15	10.07	10.98	11.81	35 10.19	0.13	3.68	15 35 13.74	7.21	
	31		D.	29.82	32.53	34.49	35.52	36.48						
	32	Lalande, 28617	D.	24.40	27.55	28.50	29.45	30.34	36 39.67	35.17	3.68	15 36 8.18	7.19	
	33		E.	48.47	49.30	51.94	52.93	53.80						
	34	Weisse, 845	C.	9.41	10.32	11.19	12.09	13.00	44 22.77	11.69	3.70	15 44 14.78	7.12	
	35		D.	30.85	33.95	34.70	35.68	36.52						
	36	Weisse, 939	C.	45.91	46.87	47.68	48.70	49.68	49 59.09	11.31	3.71	15 49 51.49	6.71	
	37		D.	7.15	9.85	10.79	11.68	12.57						
	38		B.	20.19	21.11	22.02	22.87	25.71						
	39	*h* Astreæ, —11° 39′	C.	43.35	44.35	45.30	46.25	47.10	56 45.25	0.11	3.73	15 56 48.86	7.06	
	40		D.	4.73	7.60	8.51	9.42	10.29						
	41	Arg. Z., 213, 5	E.	51.18	52.09	55.00	55.88	56.82	59 54.19	48.35	3.73	15 59 9.58	7.50	
	42		B.	39.15	40.02	40.93	41.79	44.41						
	43	δ Ophiuchi	C.	1.77	2.75	3.67	4.64	5.52	7 3.71	— 0.09	3.75	16 7 7.37	6.75	
	44		D.	22.98	25.68	26.59	27.45	28.32						
	45	*a* Astreæ, —13° 2′	B.	39.03	40.03	40.99	41.77	44.65	9 52.72	+ 11.39	3.76	16 10 7.86	7.14	
	46		C.	2.29	3.33	4.19	5.00	5.90						
	47	*b* Astreæ, —13° 7′	C.	11.82	12.70	13.61	14.59	15.43	10 25.17	— 11.63	3.76	16 10 17.29	7.15	
	48		D.	33.29	36.19	37.10	38.07	38.88						
	49	*h* 1st Comet '50, +71° 9′	C.	35.81	38.29	41.06	44.11	47.02	16 16.01	34.34	3.77	16 15 45.44	3.56	
	50		D.	40.59	49.46	51.62	54.69	57.41						
	51		B.	26.52	27.48	28.50	29.50	32.50						
	52	*a* Scorpii	C.	51.88	52.92	53.87	54.95	55.87	20 53.86	0.17	3.78	16 20 57.48	7.81	
	53		D.	15.12	18.21	19.17	20.17	21.28						
	†54	(9) Phoceæ, —4° 8′	C.	46.40	47.27	48.30	49.25	50.22	27 48.29	— 0.09	+ 3.80	16 27 51.99	— 6.81	

16–17. Several smaller stars in the field.
30. Dim.
54. Dim.

May 30. 16*h*. 30*m*. Image west *r*. 0.11. Clamp west.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m*.	*n*.	*c*.
h. May 30, 15.1	s. + 3.61	s. + 0.137	s. — 0.041	s. + 0.178	s. — 0.036

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s	s.	m. s	m. s.	s.	h. m. s.	s.	
	1		B.	53.22	55.31	57.72	59.72	6.20						
May 31	2	Radcliffe, 2936 - - -	C.	49.55	51.87	54.11	56.30	58.24	49 53.97	+ 0.16	+ 5.09	12 49 59.22	— 6.21	R.
	3		D.	41.42	48.31	50.49	52.95	54.10						
	4		B.	33.79	35.99	38.66	40.92	47.71						
	5	Radcliffe, 2948 - - -	C.	32.75	35.22	37.59	40.21	42.32	54 37.64	+ 0.18	5.09	12 54 42.91	6.19	
	6		D	27.48	34.45	36.91	39.17	41.41						
	7		A.	55.70	56.62	57.58	0.10	1.32						
	8		B.	18.77	19.65	20.64	21.51	24.22						
	9	θ Virginis - - - -	C.	41.59	42.52	43.44	44.33	45.29	2 43.39	— 0.17	5.10	13 2 48.31	— 6.11	
	10		D.	2.56	5.46	6.40	7.30	8.19						
	11		E.	25.36	26.34	28.99	29.95	30.89						
	12	Polaris, S. P. - - -	C.	13.00	36.00	2.00	26.00	50.00	8 1.40	5.75	5.10	1 8 0.75	+ 3.96	
	13		C.	51.64	52.53	53.53	54.53	55.65						
	14	✡ +27° 56′ - - -	D.	15.41	18.39	19.36	20.36	21.39	22 18.98	25.46	5.11	13 21 58.63	— 5.91	
	15		E.	41.16	42.20	45.15	46.18	47.17						
	16		A.	47.27	48.28	49.30	51.79	52.97						
	17		B.	10.39	11.25	12.24	13.19	15.78						
	18	ζ Virginis - - - -	C.	33.12	34.00	34.90	35.81	36.69	27 34.91	0.16	5.12	13 27 39.87	6.16	
	19		D	54.09	56.93	57.76	58.65	59.62						
	20		E.	16.93	17.85	20.37	21.29	22.20						
	21		B.	12.11	13.11	14.09	15.10	17.97						
	22	B. Z., 462,49, +25° 59′	C.	37.41	38.41	39.35	40.37	41.34	37 39.42	0.11	5.13	13 37 44.44	5.93	
	23		D.	0.78	3.81	4.82	5.84	6.80						
	24		B.	51.55	52.55	53.50	54.50	57.48						
	†25	B. Z., 412,139, +24° 2′	C.	16.41	17.32	18.41	19.35	20.37	46 18.41	0.11	5.13	13 46 23.43	5.95	
	26		D.	39.43	42.37	43.31	44.30	45.30						
	27		A.	45.10	46.10	47.00	49.55	50.60						
	28		B.	8.12	9.10	9.93	10.88	13.50						
	29	τ Virginis - - - -	C.	30.80	31.71	32.62	33.53	34.50	54 32.63	0.15	5.14	13 54 37.62	6.27	
	30		D.	51.81	54.56	55.49	56.42	57.31						
	31		E.	14.65	15.56	18.13	19.00	19.96						
	32		B.	44.26	45.27	46.23	47.22	49.80						
	33	✡ (8) —13° 15′ - -	C.	7.70	8.66	9.65	10.65	11.57	59 9.58	0.23	5.14	13 59 14.49	6.59	
	34		D.	29.20	31.88	32.84	33.87	34.88						
	35		B.	29.64	30.58	31.61	32.63	35.63						
	36	B. A. C., 4719 - - -	C.	55.49	56.52	57.53	58.49	59.51	6 57.55	0.29	5.15	14 7 2.41	7.07	
	37		D.	19.40	22.48	23.61	24.55	25.58						
	38		B.	18.45	19.32	20.26	21.23	23.82						
	39	Weisse, 423 - - -	C.	41.24	42.22	43.18	44.11	44.96	23 43.13	0.21	5.16	14 23 48.08	6.53	
	40		D.	2.30	5.09	5.94	6.95	7.84						
	41		B.	7.32	8.24	9.28	10.29	13.38						
	42	σ Bootis - - - - -	C	33.45	34.59	35.53	36.57	37.62	28 35.61	0.09	5.16	14 28 40.69	5.87	
	43		D.	57.76	1.08	2.06	2 97	4.09						
	44		B.	24.08	25.56	26.81	27.92	31 68						
	45	B. Z., 473, +44° 1′ -	C.	55.81	57.04	58.23	59.48	0.59	52 58.29	0.03	5.18	14 53 3.44	5.53	
	46		D.	24.80	23.81	30.11	31.12	32.37						
	47		A.	34.10	35.10	36.08	39.08	40.15						
	48		B.	59.81	0.81	1.92	2.88	5.95						
	49	ψ Bootis - - - - -	C.	25.32	26.52	27.49	28.50	29.49	58 27.50	0.07	5.19	14 58 32.62	5.86	
	50		D.	49.12	52.31	53.32	54.31	55.35						
	51		E.	14.81	15.89	18.72	19.78	20.73						
	52		B.	57.32	58.27	59.29	0.20	3.00						
	53	ι² Libræ - - - - -	C.	21.13	22.22	23.15	24.20	25.14	5 23.23	— 0.25	+ 5.19	15 5 28.17	— 7.15	
	54		D.	43.48	46.27	47.29	48.22	49.26						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h. May 31, 14.2	s. + 5.15	s. + 0.046	s. — 0.154	s. + 0.178	s. — 0.036

25. Preceded by a star of nearly same declination.

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
	1		A.	42.38	43.41	44.36	46.87	48.14						
	2		B	5.66	6.59	7.45	8.38	11.08						
May 31	3	β Libræ - - - - -	C.	28.61	29.60	30.47	31.35	32.34	9 30.46	— 0.19	+ 5.20	15 9 35.47	— 6.80	R.
	4		D.	49.80	52.75	53.55	54.44	55.46						
	5		E.	12.90	13.79	16.41	17.38	18.30						
	6		B	27.19	28.75	30.17	31.50	35.55						
	7	B. A. C., 5064 - - -	C.	3.14	4.52	5.98	7.59	9.10	15 6.07	+ 0.01	5.20	15 15 11.28	5.30	
	8		D	36.22	40.69	42.19	43.59	44.89						
	9		B.	11.73	12.75	13.79	14.79	17.68						
	10	B. A. C., 5117 - - -	C.	36.75	37.77	38.71	39.70	40.79	25 38.77	— 0.27	5.21	15 25 43.70	7.51	
	11		D.	0.02	2.80	3.80	4.72	5.74						
	12		B.	18.69	19.72	20.71	21.68	24.84						
	13	α Coronæ Borealis - -	C.	44.29	45.35	46.31	47.31	48.29	28 46.30	0.10	5.21	15 28 51.40	5.87	
	14		D.	7.82	10.80	11.84	12.90	13.90						
	15		C.	45.40	46.70	48.13	49.53	50.94						
June 8	†16	η Ursæ Majoris - - -	D.	18.35	22.22	23.52	24.69	26.30	42 22.92	34.94	18.61	13 42 6.59	5.56	Y.
	17		E.	53.21	54.67	58.78	59.93	1.48						
	18		C.	46.52	47.52	48.51	49.40	50.32						
	19	η Bootis - - - - -	D.	8.81	11.70	12.69	13.58	14.46	48 12.20	23.82	18.61	13 48 6.98	5.94	
	20		E.	32.86	33.81	36.63	37.62	38.53						
	21		C.	17.43	18.32	19.18	20.11	20.95						
	22	τ Virginis - - - -	D.	38.21	41.18	42.08	42.91	43.71	54 41.61	22.56	18.62	13 54 37.67	6.22	
	23		E.	1.11	2.10	4.77	5.61	6.50						
	24		B.	37.66	38.75	39.77	40.69	43.49						
	25	α Bootis - - - - -	C.	1.97	3.01	3.90	4.87	5.68	9 3.90	0.12	18.63	14 9 22.41	5.86	
	26		D.	24.27	27.31	28.14	29.07	29.93						
	27	w 1st Comet, '50, +49° 9′	D.	55.72	59.89	1.30	2.51	3.72	25 17.71	51.46	18.63	14 24 44.88	5.49	
	28		E.	30.49	31.79	35.89	37.32	38.44						
	29		B.	15.78	16.78	17.78	18.79	22.02						
	30	B. A. C., 4902 - - -	C.	41.77	42.82	43.91	44.91	45.88	43 43.92	0.11	18.65	14 44 2.46	5.83	
	31		D.	5.91	9.01	10.12	11.20	12.12						
	32		C.	47.84	51.46	54.86	58.52	1.47						
	33	β Ursæ Minoris - - -	D.	7.39	17.78	21.38	24.27	27.91	52 19.68	—1 25.04	18.65	14 51 13.29	4.03	
	34		E.	33.62	37.28	47.19	50.41	53.88						
	35	Weisse, XIV—1131 -	B	42.81	43.84	44.72	45.70	48.31	59 56.25	+ 11.07	18.66	15 0 25.98	6.50	
	36		C.	5.60	6.50	7.49	8.35	9.18						
	37	Weisse, XIV—1142 -	C	37.10	38.03	38.81	39.68	40.49						
	38		D.	57.89	0.80	1.60	2.49	3.37	0 50.03	— 11.35	18.66	15 0 57.33	6.51	
	39		B.	44.27	45.59	46.94	48.10	51.98						
	40	B. Z., 419, +46° 1′ -	C.	17.01	18.39	19.52	20.93	22.01	6 19.62	0.09	18.66	15 6 38.19	5.36	
	41		D.	47.30	51.18	52.50	53.69	54.88						
	42		B.	0.30	1.22	2.10	2.91	5.74						
	43	Weisse, 210 - - -	C.	23.74	24.61	25.48	26.38	27.19	12 25.49	0.15	18.66	15 12 44.00	6.99	
	44		D.	45.15	48.08	48.91	49.83	50.65						
	45		B.	57.42	58.31	59.13	59.97	2.71						
	46	10 Serpentis - - - -	C.	20.17	21.09	21.98	22.82	23.67	21 21.95	0.13	18.67	15 21 40.49	6.50	
	47		D.	41.14	43.86	44.78	45.72	46.52						
	48		B.	5.10	6.02	6.95	7.92	10.71						
	49	γ Libræ - - - - -	C.	28.65	29.63	30.54	31.42	32.30	27 30.49	0.15	18.67	15 27 49.01	7.09	
	50		D.	50.37	53.07	54.01	54.91	55.81						
	51		B.	22.75	23.68	24.73	25.78	28.71						
	52	42 Libræ - - - - -	C.	47.72	48.65	49.60	50.59	51.39	31 49.56	— 0.17	+18.67	15 32 8.07	— 7.42	
	53		D.	10.43	13.37	14.36	15.37	16.25						

16. Through clouds.

May 31. Image r. 0.00. Clamp west. Night fine.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m.	n.	c.
h. June 8, 15.3	s. +18.67	s +0.035	s. —0.101	s. +0.062	s. — 0.036

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DATE	Number.	OBJECT.	Set	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
	1		B.	45.52	46.43	47.30	48.22	50.91						
June 8	2	α Serpentis	C.	8.25	9.21	10.11	11.04	11.89	37 10.20	— 0.13	+18.68	15 37 28.75	— 6.42	Y.
	3		D.	29.62	32.36	33.20	34.06	34.96						
	4		B.	27.09	27.99	29.08	30.10	32.82						
	5	Lalande, 28766	C.	51.10	52.21	53.12	54.07	54.91	40 53.04	0.16	18.68	15 41 11.56	7.31	
	6		D.	13.18	16.12	17.06	17.92	18.88						
	7		B.	49.78	50.69	51.58	52.50	55.33						
	8	Weisse, 864	C.	13.36	14.22	15.19	16.10	17.02	45 15.18	0.15	18.68	15 45 33.71	7.16	
	9		D.	35.02	37.81	38.82	39.71	40.61						
	10	j Astreæ, —1° 52′	B.	18.54	19.40	20.37	21.31	24.01	51 20.73	22.98	18.68	15 51 16.43	7.05	
	11		B.	12.21	13.22	14.18	15.08	17.88						
	12	g Astreæ, —12° 8′	C.	35.59	36.63	37.50	38.39	39.31	58 37.47	0.15	18.69	15 58 56.01	7.12	
	13		D.	56.95	59.97	0.86	1.74	2.61						
	†14	f Astreæ, —21° 15′	C.	11.78	12.77	13.60	14.63	15.61	2 25.72	12.19	18.69	16 2 32.22	7.54	
	†15		D.	34.41	37.22	38.12	39.10	39.94						
	16	d Astreæ, —12° 53′	C.	5.64	6.50	7.43	8.38	9.22	7 18.94	— 11.65	18.69	16 7 25.98	7.18	
	17		D.	27.14	29.91	30.80	31.77	32.63						
	18	h 1st Comet, '50, +71° 8′	B.	10.48	13.22	16.12	19.02	27.09	14 51.97	+ 34.64	18.70	16 15 45.30	3.43	
	19		C.	21.13	23.85	26.93	29.60	32.25						
	20	i 1st Comet, '50, +71° 14′	D.	35.70	43.80	46.66	49.34	51.96	16 45.49	— 69.72	18.70	16 15 54.47	3.42	
	21	(9) Phoceæ, —4° 8′	C.	31.57	32.65	33.45	34.34	35.29	27 44.72	11.38	18.71	16 27 52.05	6.87	
	22		D.	52.60	55.56	56.42	57.27	58.10						
	23		B.	52.22	53.51	55.01	56.41	0.69						
	24	✡ (6) +49° 9′	C.	26.89	28.39	29.78	31.10	32.37	34 29.75	0.08	18.71	16 34 48.38	4.96	
	25		D.	59.12	3.28	4.58	5.80	7.18						
	26		B.	5.68	7.01	8.30	9.64	14.03						
	27	42 Herculis	C.	40.22	41.72	43.20	44.62	45.86	34 43.13	0.08	18.71	16 35 1.75	4.96	
	28		D.	12.51	16.88	18.12	19.56	20.90						
	29		C.	38.42	40.44	42.61	44.81	46.70						
	30	g Draconis	D.	28.13	34.33	36.10	38.23	40.47	40 35.36	— 52.77	18.71	16 40 1.31	— 3.93	
	31		E.	21.23	23.71	29.68	31.79	33.81						
	32		B.	4.86	11.42	18.43	25.11	44.49						
	33	ε Ursæ Minoris	C.	54.40	1.81	7.11	14.42	19.81	0 7.33	+ 0.09	18.73	17 0 26.14	+ 0.99	
	34		D.	30.41	49.51	56.01	2.90	9.24						
	35		B.	37.88	38.94	39.85	40.78	43.57						
	36	a^1 Herculis	C.	1.49	2.43	3.33	4.35	5.21	8 3.38	— 0.12	18.73	17 8 21.99	— 6.20	
	37		D.	23.11	26.12	26.98	27.90	28.78						
	38		B.	47.16	48.10	49.10	50.09	53.02						
	39	θ Ophiuchi	C.	12.24	13.32	14.21	15.18	16.10	13 14.22	0.17	18.73	17 13 32.78	7.94	
	40		D.	35.36	38.39	39.39	40.37	41.25						
	41		B.	39.45	40.39	41.29	42.22	45.06						
11	42	Weisse, XIV, —1150	C.	2.87	3.83	4.80	5.75	6.56	1 4.76	0.15	21.85	15 1 26.47	6.95	
	43		D.	24.12	27.41	28.36	29.27	30.10						
	44		B.	33.72	34.69	35.59	36.49	39.33						
	45	3 Serpentis	C.	56.59	57.61	58.53	59.39	0.30	7 58.48	0.13	21.85	15 8 20.20	6.40	
	46		D.	17.67	20.49	21.46	22.30	23.10						
	47		C.	11.81	12.79	13.72	14.54	15.45						
	48	β Libræ	D.	33.09	35.90	36.71	37.65	38.52	9 36.34	— 22.82	21.85	15 9 35.36	— 6.82	
	49		E.	56.10	57.02	59.70	0.60	1.47						
	50	B. A. C., 5140	C.	42.00	5.00	27.50	50.50	12.50	23 27.50	+ 0.56	21.84	15 23 49.90	+ 9.60	
	51	μ Coronæ Borealis	D.	15.15	18.68	19.72	20.98	22.08	30 33.80	— 43.64	+21.83	15 30 11.99	— 5.50	
	52		E.	44.50	45.71	49.33	50.41	51.41						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m.	n.	c.
h. June 8, 15.3	s. + 18.67	s. + 0.035	s. — 0.101	s. + 0.062	s. — 0.036

14–15. Dim.

June 8. 17h. 20m. Image east r. 0.04. Clamp west.
11. Night hazy; stars indistinct.

Hosted by Google

DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
	1		B.	42.42	43.35	44.28	45.08	47.80						
June 11	2	α Serpentis - - - -	C.	5.23	6.10	6.98	7.88	8.72	37 7.10	— 0.13	+21.82	15 37 28.80	— 6.44	Y
	3		D.	26.34	29.31	30.13	31.07	31.85						
	4		C.	39.40	43.98	48.80	53.10	57.27						
	5	ζ Ursæ Minoris - - -	D.	23.09	35.70	40.30	45.06	49.10	50 38.40	1 49.72	21.82	15 49 10.50	2.31	
	6		E.	14.59	18.46	31.24	35.60	40.29						
	7		B.	37.82	38.78	39.70	40.64	43.60						
	8	β^1 Scorpii - - - - -	C.	2.00	3.04	3.94	4.88	5.90	57 3.92	0.16	21.81	15 57 25.57	7.46	
	9		D.	24.20	27.09	28.06	29.08	29.87						
	10		B.	54.64	55.58	56.57	57.42	60.39						
	11	B. A. C., 5408 - - -	C.	18.81	19.76	20.63	21.60	22.39	6 20.56	0.16	21.80	16 6 42.20	7.45	
	12		D.	40.58	43.54	44.53	45.44	46.48						
	13		B.	15.50	16.41	17.36	18.22	20.94						
	14	ε Ophiuchi - - - -	C	38.41	39.31	40.11	40.91	41.81	10 40.11	0.14	21.80	16 11 1.77	6.89	
	15		D.	59.31	1.95	2.81	3.87	4.69						
	16		B.	14.64	15.63	16.56	17.51	20.41						
	17	ψ Ophiuchi - - - -	C.	38.80	39.79	40.65	41.60	42.40	15 40.71	0.16	21.80	16 16 2.35	7.55	
	18		D.	1.11	3.99	4.89	5.90	6.80						
	19		B.	1.50	2.49	3.42	4.38	7.43						
	20	22 Scorpii - - - - -	C.	26.47	27.52	28.50	29.48	30.50	21 28.52	0.17	21.79	16 21 50.15	7.84	
	21		D	49.61	52.68	53.61	54.70	55.57						
	22		B.	28.82	29.88	30.90	31.90	34.83						
	23	τ Scorpii - - - - -	C.	54.71	55.78	56.65	57.58	58.56	26 56.64	0.17	21.79	16 27 18.25	8.05	
	24		D.	18.33	21.48	22.38	23.40	24.42						
	25		B.	17.52	18.77	20.06	21.12	24.70						
	26	η Herculis - - - -	C.	46.98	48.15	49.44	50.49	51.58	37 49.36	0.10	21.78	16 38 11.03	5.39	
	27		D.	14.11	17.72	18.81	19.82	21.12						
	28		B.	27.77	28.83	29.91	30.98	34.25						
	29	B. A. C., 5678 - - -	C.	54.50	55.65	56.69	57.77	58.70	45 56.61	0.18	21.77	16 46 18.20	8.34	
	30		D.	18.94	22.30	23.31	24.22	25.32						
	31		C.	37.67	38.78	39.68	40.65	41.60						
	†32	B. A. C., 5684 - -	D.	2.23	5.32	6.42	7.49	8.40	47 5.91	— 26.38	21.77	16 47 1.30	— 8.34	
	33		E.	28.80	29.81	33.00	33.87	34.87						
	34		B.	1.12	8.19	14.93	21.54	41.20						
	35	ε Ursæ Minoris - - -	C.	50.79	56.58	3.51	9.37	16.82	0 3.76	+ 0.09	21.76	17 0 25.61	+ 1.12	
	36		D.	26.50	46.41	53.45	0.02	5.98						
	37		B.	35.09	35.96	36.91	37.84	40.60						
	38	α^1 Herculis - - - -	C.	58.50	59.52	0.41	1.35	2.16	8 0.42	— 0.12	21.75	17 8 22.06	— 6.25	
	39		D.	20.21	23.06	24.01	24.95	25.80						
	40		B.	44.09	45.09	46.10	47.00	49.97						
	41	θ Ophiuchi - - - -	C.	9.23	10.29	11.12	12.18	13.05	13 11.14	0.17	21.75	17 13 32.73	7.96	
	42		D.	32.25	35.28	36.23	37.16	38.12						
	43		C.	50.20	51.16	52.06	52.90	53.86						
13	44	α^2 Libræ - - - - -	D.	11.88	14.78	15.80	16.71	17.57	43 15.33	23.39	23.22	14 43 15.16	6.89	
	45		E.	35.68	36.62	39.29	40.29	41.13						
	46		B.	9.47	10.71	11.72	12.99	16.62						
	47	B. Z., 473, +43° 58′ -	C.	40.83	41.95	43.07	44.21	45.33	50 43.23	0.08	23.25	14 51 6.40	5.43	
	48		D.	9.59	13.51	14.93	16.10	17.41						
	49		C.	10.21	11.26	12.19	13.13	14.08						
	50	β Libræ - - - - -	D.	31.70	34.50	35.44	36.41	37.37	9 34.92	22.81	23.31	15 9 35.42	6.82	
	51		E.	54.62	55.54	58.30	59.09	59.93						
	52		B.	42.41	44.10	45.68	47.40	52.41						
	53	ι Draconis - - - -	C.	26.89	28.86	30.55	32.39	33.89	21 30.49	— 0.06	+23.35	15 21 53.79	— 4.75	
	54		D.	8.22	13.60	15.29	16.96	18.74						

32. Dim.

June 11. 17*h*. 20*m*. Image east 0.04*r*. Clamp west.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m*.	*n*.	*c*.
h. June 11, 16.2	s. + 21.80	s. — 0.047	s. — 0.101	s. + 0.062	s. — 0.036

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
June 13	1	γ Libræ	D.	45.70	48.44	49.50	50.46	51.38	27 0.59	— 34.83	+23.37	15 26 49.13	— 7.12	Y.
	2		E.	9.03	10.01	12.89	13.80	14.69						
	3		B.	19.40	20.33	21.37	22.20	24.96						
	† 4	Lalande, 28617	C.	43.10	44.07	44.91	45.90	46.72	35 44.99	0.15	23.40	15 36 8.24	7.24	
	5		D.	4.98	7.88	8.74	9.69	10.56						
	6		B.	12.51	13.44	14.37	15.28	18.01						
	7	Lalande, 28697	C.	36.20	37.30	38.19	39.19	40.10	37 38.19	0.15	23.41	15 38 1.45	7.25	
	8		D.	58.21	1.12	2.09	2.97	3.91						
	9		B.	13.14	14.22	15.09	16.08	18.87						
	10	47 Libræ	C.	37.22	38.31	39.20	40.11	41.06	46 39.20	0.15	23.44	15 47 2.48	7.40	
	11		D.	59.48	2.40	3.37	4.27	5.13						
	12		B.	36.19	37.19	38.09	39.01	41.80						
	13	β^1 Scorpii	C.	0.23	1.22	2.17	3.15	3.98	57 2.21	0.15	23.47	15 57 25.53	7.47	
	14		D.	22.60	25.45	26.48	27.35	28.27						
	15		B.	19.33	20.23	21.20	22.11	24.90						
	16	δ Ophiuchi	C.	42.21	43.18	44.09	44.91	45.84	6 44.05	0.13	23.51	16 7 7.43	6.84	
	17		D.	3.31	6.09	6.98	7.79	8.65						
	18		A.	25.09	26.05	26.92	29.53	30.57						
	19		B.	47.84	48.79	49.71	50.66	53.28						
14	20	τ Virginis	C.	10.63	11.61	12.48	13.39	14.34	54 12.49	0.26	25.28	13 54 37.51	6.20	R.
	21		D.	31.78	34.40	35.35	36.24	37.19						
	22		E.	54.39	55.33	57.94	58.93	59.80						
	23		A.	32.88	33.86	34.93	38.15	39.29						
	24		B.	59.66	0.69	1.71	2.75	6.03						
	25	ρ Bootis	C.	26.16	27.19	28.18	29.25	30.32	25 28.23	0.22	25.32	14 25 53.33	5.73	
	26		D.	50.82	53.87	54.89	55.84	56.90						
	27		E.	17.30	18.25	21.38	22.33	23.24						
	28		B.	17.70	18.56	19.49	20.49	23.19						
	29	Weisse, 668	C.	40.51	41.42	42.30	43.30	44.22	36 42.41	0.30	25.34	14 37 7.45	6.57	
	30		D.	1.68	4.48	5.33	6.28	7.19						
	31		B.	32.78	33.81	34.79	35.79	38.44						
	32	Weisse, 759	C.	55.87	56.89	57.80	58.74	59.59	40 57.75	0.30	25.34	14 41 22.80	6.62	
	33		D.	17.12	19.78	20.73	21.61	22.51						
	34	β Ursæ Minoris	D.	0.59	11.30	14.46	18.15	21.29	52 55.54	2 7.71	25.36	14 51 13.19	3.75	
	35		E.	27.28	30.50	40.65	43.76	47.46						
	36		B.	32.11	33.05	33.99	34.92	37.45						
	37	Weisse, 1129	C.	54.90	55.89	56.80	57.65	58.54	59 56.73	0.29	25.37	15 0 21.81	6.51	
	38		D.	15.99	18.52	19.46	20.38	21.33						
	39		B.	37.21	38.19	39.10	40.10	42.87						
	40	ι^2 Libræ	C.	1.21	2.17	3.10	4.09	5.08	5 3.19	0.32	25.38	15 5 28.25	7.17	
	41		D.	23.50	26.39	27.31	28.27	29.29						
	42		A.	22.35	23.30	24.23	26.80	27.89						
	43		B.	45.56	46.41	47.33	48.28	50.93						
	44	β Libræ	C.	8.60	9.51	10.40	11.32	12.25	9 10.37	0.27	25.38	15 9 35.49	6.81	
	45		D.	29.75	32.56	33.47	34.39	35.31						
	46		E.	52.89	53.77	56.32	57.30	58.28						
	47		D.	38.33	44.81	47.29	49.82	51.82	13 15.32	1 27.59	25.39	15 12 13.12	4.28	
	48	A Z.N., 116,71, +67°23	E.	36.80	39.25	45.97	48.29	50.82						
	49		B.	51.70	52.70	53.69	54.70	57.61						
	50	B. A. C., 5117	C.	16.75	17.73	18.70	19.79	20.71	25 18.75	— 0.32	+25.40	15 25 43.83	— 7.55	
	51		D.	39.88	42.81	43.85	44.85	45.86						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s	s.	s.	s.	s.
June 13, 15.5	+ 23.38	+ 0.204	— 0.091	+ 0.062	— 0.036
14, 15.4	+ 25.40	+ 0.080	— 0.256	+ 0.062	— 0.036

4. This was recorded on the fillet 10*s.* more.

June 13. 16*h.* 15*m* Image east $\overset{r.}{0.03}$. Clamp west. Stars unsteady.

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
	1		A.	33.04	33.96	34.97	38.17	39.19						
	2		B.	58.82	59.72	0.70	1.72	4.72						
June 14	3	α Coronæ Borealis - -	C.	24.41	25.37	26.34	27.28	28.29	28 26.33	— 0.23	+25.41	15 28 51.51	— 5.85	R.
	4		D.	47.93	51.14	52.08	53.07	53.94						
	5		E.	13.53	14.51	17.42	18.43	19.48						
	6		B.	15.49	16.48	17.39	18.30	20.89						
	7	Weisse, 620 - - -	C.	38.27	39.31	40.25	41.18	42.10	32 40.17	0.29	25.41	15 33 5.29	6.69	
	8		D.	59.36	1.91	2.91	3.90	4.80						
	9		B.	17.53	18.48	19.41	20.39	23.21						
	10	Lalande, 28617 - -	C.	41.31	42.30	43.23	44.20	45.19	35 43.19	0.31	25.42	15 36 8.30	7.24	
	11		D.	3.29	5.84	6.83	7.88	8.84						
	12	Lalande, 28726 - -	D.	22.09	25.05	26.03	26.98	27.90	39 37.33	35.57	25.42	15 39 27.18	7.30	
	13		E.	46.13	47.08	49.78	50.71	51.60						
	14		B.	23.57	24.48	25.38	26.28	28.84						
	†15	(8) Phoceæ, —2° 23′ -	C.	46.20	47.20	48.11	49.01	49.93	45 48.13	0.29	25.43	15 46 13.27	6.75	
	16		D.	7.31	10.01	10.95	11.91	12.82						
	17		A.	9.94	11.05	12.06	14.81	15.85						
	18		B.	34.38	35.28	36.28	37.26	40.08						
	19	β^1 Scorpii - - - - -	C.	58.33	59.35	0.36	1.29	2.22	57 0.32	0.28	25.45	15 57 25.49	7.47	
	20		D.	20.78	23.61	24.55	25.48	26.33						
	21		E.	44.88	45.82	48.40	49.40	50.32						
	22		B.	31.38	32.37	33.40	34.38	37.15						
	23	e Irene, —20° 43′ - -	C.	55.74	56.71	57.70	58.63	59.61	5 57.73	0.32	25.46	16 6 22.87	7.58	
	24		D.	18.22	21.19	22.18	23.13	24.10						
	25		B.	35.58	36.58	37.60	38.54	42.23						
	26	Lacaille, 6818 - - -	C.	3.49	4.49	5.49	6.52	7.50	15 5.52	0.34	25.47	16 15 30.64	8.47	
	27		D.	28.89	32.53	33.49	34.48	35.50						
	28		A.	39.48	40.53	41.59	44.57	45.65						
	29		B.	5.05	6.03	7.09	8.13	11.03						
	30	α Scorpii - - - - -	C.	30.33	31.30	32.35	33.37	34.45	20 32.36	0.29	25.48	16 20 57.55	7.93	
	31		D.	53.79	56.72	57.73	58.68	59.75						
	32		E.	19.15	20.17	23.07	24.05	24.92						
	33		A.	3.12	4.09	4.98	7.71	8.71						
	34		B.	26.58	27.52	28.43	29.31	32.09						
15	35	Moon's 1st Limb - -	C.	49.85	50.81	51.72	52.71	53.50	32 51.70	0.11	26.42	11 33 18.00	- -	Y.
	36		D.	11.31	14.27	15.11	16.01	16.88						
	37		E.	34.71	35.60	38.26	39.15	40.02						
	38		B.	8.58	9.51	10.47	11.39	14.19						
	39	β Leonis - - - - -	C.	32.21	33.17	34.02	34.97	35.87	41 34.06	— 0.07	26.41	11 42 0.40	5.51	
	40		D.	53.92	56.80	57.72	58.61	59.50						
	41		B.	23.84	25.36	26.91	28.41	33.16						
	42	γ Ursæ Majoris - - -	C.	3.10	4.68	6.11	7.65	9.18	46 6.15	+ 0.19	26.41	11 46 32.76	5.93	
	43		D.	39.08	43.91	45.50	46.95	48.49						
	44		C.	33.10	34.10	35.12	36.07	37.06						
	45	ε Corvi - - - - -	D.	55.86	58.82	59.80	0.71	1.57	2 59.28	— 24.36	+26.40	12 3 1.33	— 5.57	
	46		E.	20.39	21.38	24.21	25.05	26.03						
	47		A.	35.00	59.00	21.00	35.00	54.00						
	48		B.	14.00	38.00	1.00	25.00	38.00						
	†49	Polaris, S. P. - - -	C.	4.00	27.00	53.00	15.00	41.00	7 52.24	- -	- -	- - - -	- -	
	50		D.	3.00	14.00	39.00	3.00	28.00						
	51		E.	50.00	13.00	27.00	53.00	16.00						

15. Is this not recorded 1*s.* too much?
49. Steady.
Azimuth cor., for June 15, from Polaris, S. P., and α Virginis.

June 14. 16*h.* 30*m.* Image east $\overset{r.}{0.19}$. Clamp west.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
June 15, 13.5	+ 26.35	— 0.034	— 0.093	+ 0.217	— 0.036

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Date.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
	1		B.	4.27	5.20	6.12	6.95	9.69						
June 15	2	α Virginis - - - -	C.	27.46	28.41	29.29	30.21	31.09	17 29.29	— 0.17	+26.36	13 17 55.48	— 6.16	Y.
	3		D.	48.81	51.60	52.52	53.41	54.29						
	4		D.	0.99	3.80	4.86	5.77	6.68						
	5	η Bootis - - - - -	E.	25.07	25.98	28.78	29.68	30.59	48 16.22	35.62	26.34	13 48 6.94	5.89	
	6		C.	9.50	10.49	11.35	12.18	13.09						
	7	τ Virginis - - - -	D.	30.60	33.40	34.28	35.17	36.00	54 33.79	— 22.54	26.34	13 54 37.59	6.19	
	8		E.	53.38	54.28	56.85	57.77	58.58						
	9		B.	11.17	12.59	14.18	15.58	19.99						
	10	ι Bootis - - - - -	C.	48.10	49.65	51.11	52.63	54.09	10 51.14	+ 0.13	26.33	14 11 17.60	5.28	
	11		D.	22.29	26.67	28.20	29.73	31.19						
	12		B.	4.60	5.58	6.56	7.50	10.61						
	13	Arg. Z, 301,47—23° 52′	C.	29.57	30.61	31.41	32.41	33.42	34 31.51	— 0.23	26.32	14 34 57.60	7.11	
	14		D.	52.51	55.55	56.49	57.45	58.46						
	15		C.	5.52	6.50	7.51	8.49	9.42						
	†16	Arg. Z., 301,48—23° 51′	D.	28.67	31.55	32.53	33.48	34.42	35 32.07	24.72	26.31	14 35 33.66	7.12	
	17		E.	53.53	54.36	57.41	58.34	59.29						
	18		B.	23.48	24.45	25.41	26.30	29.06						
	19	α^2 Libræ - - - - -	C.	47.17	48.11	49.00	49.95	50.85	42 49.02	— 0.19	26.31	14 43 15.14	6.88	
	20		D.	8.91	11.79	12.70	13.60	14.52						
	21		A.	28.79	29.71	30.68	33.41	34.38						
	†22	Weisse, 872 - - -	B.	51.80	52.68	53.51	54.42	57.18	45 53.87	+ 22.33	26.31	14 46 42.51	6.45	
	23		C.	14.51	15.50	16.38	17.19	17.95						
	†24		D.	38.51	41.40	42.28	43.12	43.93						
	†25	Weisse, 874 - - -	E.	1.31	2.24	4.74	5.63	6.60	46 52.98	— 33.73	26.31	14 46 45.55	6.46	
	26		B.	12.47	15.98	19.49	23.02	33.16						
	†27	β Ursæ Minoris - - -	C.	39.09	42.63	45.80	49.33	52.69	50 45.96	+ 0.56	26.31	14 50 12.83	3.70	
	28		D.	58.71	9.17	12.64	15.95	19.22						
	29		B.	34.94	35.89	36.81	37.74	40.58						
	30	Weisse, XIV —1150 -	C.	58.37	59.39	0.29	1.18	2.06	1 0.27	— 0.18	26.30	15 1 26.38	6.93	
	31		D.	20.06	22.81	23.75	24.64	25.49						
	32		B.	18.97	19.81	20.69	21.57	24.45						
	33	Weisse, 79 - - - -	C.	42.37	43.23	44.06	44.97	45.81	5 44.13	0.18	26.30	15 6 10.24	6.96	
	34		D.	3.88	6.71	7.61	8.44	9.32						
	35		B.	44.40	45.32	46.18	47.12	49.82						
	36	β Libræ - - - - -	C.	7.39	8.21	9.17	10.12	11.00	9 9.24	0.16	26.29	15 9 35.37	6.81	
	37		D.	28.66	31.42	32.35	33.28	34.10						
	38		C.	33.11	34.04	34.85	35.88	36.84						
16	39	ε Corvi - - - - -	D.	55.67	58.64	59.55	0.49	1.39	2 59.10	24.32	26.54	12 2 1.32	5.56	
	40		E.	20.21	21.14	23.97	24.88	25.79						
	41		B.	59.25	0.12	1.02	1.85	4.51						
	42	η Virginis - - - -	C.	21.97	22.82	23.71	24.60	25.45	12 23.75	0.14	26.53	12 12 50.14	5.64	
	43		D.	42.90	45.73	46.61	47.48	48.31						
	44		A.	33.38	34.29	35.22	38.03	39.03						
	45		B.	57.10	57.97	58.91	59.90	2.64						
	†46	Moon's 1st Limb - -	C.	20.77	21.71	22.57	23.48	24.35	26 22.58	0.13	26.51	12 26 49.22	- -	
	47		D.	42.58	45.43	46.31	47.18	48.11						
	48		E.	6.19	7.16	9.88	10.70	11.58						
	49		B.	26.73	27.65	28.57	29.48	32.27						
	50	ε Virginis - - - -	C.	50.01	50.94	51.87	52.79	53.61	54 51.84	0.12	26.48	12 55 18.19	5.73	
	51		D.	11.39	14.23	15.11	15.98	16.91						
	52		C.	20.09	20.95	21.83	22.72	23.60						
	53	θ Virginis - - - -	D.	41.11	43.90	44.79	45.64	46.49	2 44.35	— 22.63	+26.47	13 2 48.19	— 5.98	
	54		E.	4.00	4.89	7.58	8.40	9.21						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m.	n.	c.
h.	s.	s.	s.	s.	s.
June 15, 13.5	+ 26.35	— 0.034	— 0.093	+ 0.217	— 0.036
16, 12.6	+ 26.50	— 0.067	— 0.107	+ 0.091	— 0.036

16. Dim.
22. Recorded on the fillet 10″ more.
24–25. Recorded on the fillet 10″ more.
27. Fine observation.
46. Steady.

June 15. 15*h*. 15*m*. Image west $\overset{r.}{0.09}$. Clamp west.

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
June 16	1	Polaris, S. P.	C.	59.50	22.50	49.00	11.00	36.50	7 47.70	— 2.21	+26.47	1 8 11.85	— 9.03	Y.
	2		B.	4.21	5.08	5.99	6.90	9.63						
	3	α Virginis	C.	27.33	28.29	29.12	30.09	30.93	17 29.17	0.16	26.46	13 17 55.47	6.15	
	4		D.	48.75	51.46	52.37	53.28	54.12						
	5		C.	18.97	19.90	20.79	21.69	22.55						
18	6	θ Virginis	D.	40.01	42.80	43.69	44.51	45.42	2 43.25	22.70	27.62	13 2 48.16	5.95	
	7		E.	2.89	3.72	6.38	7.24	8.13						
	8	Polaris, S. P.	B.	13.00	36.00	59.00	20.00	37.00	7 48.15	2.40	27.62	1 8 13.36	10.92	
	9		D.	2.00	13.00	35.00	59.50	27.00						
	10		B.	3.04	3.91	4.79	5.72	8.49						
	11	α Virginis	C.	26.12	27.15	28.03	28.93	29.80	17 28.03	0.23	27.61	13 17 55.41	6.13	
	12		D.	47.59	50.38	51.25	52.15	53.07						
	13	ζ Virginis	D.	31.47	34.19	35.11	36.03	36.89	27 45.88	33.82	27.61	13 27 39.68	6.02	
	14		E.	54.22	55.09	57.78	58.64	59.41						
	15		A.	52.84	53.87	54.78	57.48	58.49						
	16		B.	16.45	17.48	18.40	19.32	22.20						
	17	85 Virginis	C.	40.15	41.10	42.08	42.97	43.80	37 41.99	0.21	27.61	13 38 9.40	6.37	
	18		D.	1.93	4.80	5.71	6.57	7.40						
	19		E.	25.44	26.37	29.21	30.11	30.91						
	20		A.	5.49	6.40	7.34	10.19	11.26						
	21		B.	29.52	30.41	31.38	32.30	35.20						
	22	89 Virginis	C.	53.41	54.38	55.19	56.05	56.91	41 55.19	0.21	27.61	13 42 22.60	6.44	
	23		D.	15.38	18.28	19.16	20.06	20.89						
	24		E.	39.28	40.13	42.87	43.71	44.61						
	25		B.	12.58	13.55	14.49	15.43	18.57						
	26	Rumker, 4529	C.	37.88	38.81	39.76	40.79	41.76	50 39.82	0.17	27.61	13 51 7.26	5.76	
	27		D.	1.10	4.11	5.18	6.12	7.11						
	28		B.	7.31	8.21	9.14	10.08	12.71						
	29	94 Virginis	C.	30.30	31.27	32.16	33.01	33.85	58 32.15	0.22	27.61	13 58 59.53	6.38	
	30		D.	51.54	54.33	55.27	56.12	56.91						
	31		B.	22.06	23.03	23.90	24.80	27.58						
	32	Weisse, 31	C.	45.09	45.91	46.81	47.75	48.60	2 46.84	0.22	27.61	14 3 14.23	6.34	
	33		D.	6.11	8.90	9.78	10.74	11.60						
	34	Arg. Z., 301,20—23°51′	C.	16.34	17.27	18.18	19.11	20.00	12 18.18	0.25	27.61	14 12 45.54	6.89	
	35		A.	13.78	14.81	15.79	18.65	19.73						
	36		B.	38.92	39.80	40.77	41.71	44.71						
	†37	Moon's 1st Limb	C.	3.87	4.82	5.71	6.68	7.64	22 5.72	0.22	27.61	14 22 33.11	- -	
	38		D.	26.85	29.78	30.72	31.70	32.64						
	39		E.	51.70	52.64	55.61	56.52	57.48						
	40		B.	2.88	3.81	4.88	5.87	8.91						
	41	ε Bootis	C.	28.57	29.60	30.61	31.61	32.58	38 30.62	0.17	27.61	14 38 58.06	5.76	
	42		D.	52.29	55.48	56.48	57.38	58.39						
	43		A.	58.58	59.50	0.46	3.20	4.26						
	44		B.	22.17	23.16	24.14	25.09	27.89						
	45	α^2 Libræ	C.	45.82	46.70	47.65	48.66	49.47	42 47.72	— 0.21	27.61	14 43 15.13	6.86	
	46		D.	7.67	10.49	11.43	12.41	13.22						
	47		E.	31.28	32.21	35.05	35.85	36.75						
	48		B.	12.10	15.15	19.07	22.31	32.40						
	49	β Ursæ Minoris	C	38.17	41.36	44.82	48.70	51.85	50 45.12	+ 0.02	27.61	14 51 12.76	3.51	
	50		D.	57.91	8.43	11.65	14.97	17.99						
	51		A.	40.68	41.62	42.72	45.71	46.71						
	52		B	5.92	6.95	7.87	8.91	11.76						
	53	20 Libræ	C.	30.94	31.97	32.90	33.88	34.80	55 32.88	— 0.22	+27.61	14 56 0.27	— 7.29	
	54		D.	53.91	57.08	58.08	58.93	59.87						
	55		E.	19.20	20.15	22.97	23.84	24.80						

37. Steady.
Azimuth cor., for June 16 and 18, from Polaris, S. P., of those dates.
r.
June 16. 13h. 25m. Image east 0.02. Clamp west.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m.	n.	c.
h.	s.	s.	s.	s.	s.
June 18, 14.1	+ 27.61	— 0.003	— 0.176	+ 0.091	— 0.036

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m s.	s.	h. m. s.	s.	
	1		B.	43.12	44.09	44.92	45.81	48.70						
June 18	2	β Libræ - - - - -	C.	6.19	7.21	8.11	9.02	9.91	9 8.01	— 0.23	+27.61	15 9 35.39	— 6.80	Y.
	3		D.	27.39	30.09	30.93	31.89	32.80						
	4		A.	3.88	5.10	6.07	8.68	9.75						
	5		B.	28.20	29.21	30.18	31.16	34.10						
19	6	α Bootis - - - - -	C.	52.48	53.43	54.39	55.34	56.35	8 54.38	0.20	28.11	14 9 22.29	5.77	R.
	7		D.	14.71	17.55	18.54	19.58	20.46						
	8		E.	39.13	40.13	42.80	43.71	44.70						
	9		A.	30.20	31.11	32.10	35.10	36.01						
	10		B.	56.69	57.69	58.69	59.70	63.09						
	11	ρ Bootis - - - - -	C.	23.26	24.21	25.21	26.40	27.29	25 25.31	0.18	28.10	14 25 53.23	5.67	
	12		D.	47.78	50.98	52.01	53.08	54.08						
	13		E.	14.49	15.46	18.36	19.34	20.39						
	14		C.	10.74	11.85	12.86	13.85	14.87						
	15	σ Bootis - - - - -	D.	35.05	38.37	39.35	40.29	41.24	28 38.77	26.24	28.10	14 28 40.73	5.69	
	16		E.	1.31	2.32	5.51	6.49	7.47						
	17		B.	14.75	15.79	16.72	17.61	20.23						
	18	Weisse, 668 - - -	C.	37.60	38.58	39.54	40.41	41.36	36 39.56	0.27	28.10	14 37 7.38	6.54	
	19		D.	58.80	1.67	2.57	3.41	4.31						
	20		A.	57.90	58.92	59.88	2.69	3.80						
	21		B.	21.80	22.71	23.72	24.63	27.37						
	22	α^2 Libræ - - - - -	C.	45.31	46.38	47.35	48.28	49.25	42 47.33	0.26	28.10	14 43 15.17	6.85	
	23		D.	7.32	10.25	11.25	12.20	13.01						
	24		E.	30.86	31.80	34.64	35.57	36.44						
	25		B.	10.71	14.26	17.87	21.49	31.60						
	26	β Ursæ Minoris - - -	C.	37.50	41.51	44.64	47.72	50.79	50 44.37	0.03	28.09	14 51 12.44	3.46	
	27		D.	56.33	7.58	11.27	14.66	17.70						
	28		A.	40.34	41.30	42.24	45.18	46.15						
	29		B.	5.44	6.31	7.30	8.32	11.49						
	30	20 Libræ - - - - -	C.	30.49	31.48	32.41	33.45	34.40	55 32.45	0.27	28.09	14 56 0.26	7.29	
	31		D.	53.70	56.60	57.57	58.58	59.49						
	32		E.	18.72	19.61	22.60	23.51	24.48						
	33		B.	51.12	52.12	53.12	54.13	57.17						
	†34	B. A. C., 5066 - - -	C.	16.79	17.79	18.79	19.85	20.85	15 18.76	0.31	28.08	15 15 46.53	7.56	
	35		D.	40.31	43.39	44.35	45.30	46.32						
	36		A.	28.40	29.33	30.35	33.48	34.52						
	37		B.	54.14	55.11	56.12	57.10	0.19						
	38	Moon's 1st Limb - -	C.	19.74	20.71	21.70	22.71	23.71	25 21.73	0.28	28.08	15 25 49.52	- -	
	39		D.	43.38	46.44	47.42	48.42	49.38						
	40		E.	9.01	9.96	13.02	13.91	14.96						
	41		B.	44.20	45.14	46.15	47.13	50.28						
	42	39 Libræ - - - - -	C.	9.81	10.78	11.73	12.81	13.79	28 11.88	0.32	28.08	15 28 39.64	7.69	
	43		D.	33.70	36.69	37.70	38.63	39.62						
	44		A.	13.22	14.16	15.10	17.70	18.70						
	45		B.	36.28	37.13	38.09	39.01	41.61						
	46	α Serpentis - - - -	C.	59.14	0.19	1.10	1.98	2.85	37 0.99	0.22	28.08	15 37 28.84	6.43	
	47		D.	20.20	22.97	23.97	24.87	25.78						
	48		E.	43.30	44.20	46.86	47.74	48.61						
	49		C.	26.30	27.25	28.20	29.22	30.20						
	50	B. A. C., 5215 - - -	D.	50.08	52.98	54.11	55.10	56.12	39 53.66	25.78	28.07	15 39 55.96	7.79	
	51		E.	15.87	16.86	19.86	20.88	21.94						
	52		B.	32.23	33.17	34.10	34.94	37.59						
	53	Weisse, 848 - - -	C.	55.14	56.13	57.00	57.89	58.84	43 57.02	— 0.28	+28.07	15 44 24.81	— 6.92	
	54		D.	16.21	19.17	20.10	20.92	21.81						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
June 19, 15.1	+ 28.09	— 0.023	— 0.228	+ 0.091	— 0.036

34. Preceded by a smaller star.

June 18. 15*h.* 25*m.* Image east *r.* 0.09. Clamp west.

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s	m. s.	s.	h. m. s.	s.	
	1		A.	0.70	1.80	2.81	5.88	6.95						
	2		B.	27.00	27.97	28.93	30.09	32.99						
June 19	3	ρ Scorpii - - - - -	C.	52.86	53.85	54.85	55.80	56.86	47 54.85	— 0.28	+28.07	15 48 22.64	— 7.90	R.
	4		D.	16.70	19.82	20.88	21.90	22.94						
	5		E.	42.70	43.76	46.64	47.79	48.81						
	6		A.	7.29	8.30	9.29	12.07	13.16						
	7		B.	31.68	32.69	33.67	34.59	37.42						
	8	β^1 Scorpii - - - - -	C.	55.77	56.80	57.72	58.64	59.59	56 57.65	0.26	28.07	15 57 25.45	7.47	
	9		D.	17.88	20.84	21.76	22.71	23.65						
	10		E.	42.29	43.31	45.76	46.75	47.68						
	11		B.	18.73	21.30	23.60	25.62	31.88						
	12	Arg. Z. N., 123,2, +65°3′	C.	13.20	15.47	17.48	19.46	21.65	4 17.51	0.12	28.07	16 4 45.46	4.08	
	13		D.	4.81	8.80	11.44	13.61	15.59						
	14		B.	43.83	44.81	45.79	46.73	49.88						
20	15	39 Libræ - - - - -	C.	9.51	10.50	11.41	12.41	13.40	28 11.47	0.23	28.50	15 28 39.74	7.70	Y.
	16		D.	33.10	36.19	37.23	38.20	39.10						
	17		B.	35.81	36.70	37.61	38.51	41.13						
	†18	α Serpentis - - - -	C.	58.68	59.60	0.50	1.42	2.29	37 8.02	7.72	28.49	15 37 28.80	6.43	
	19		D.	42.90	43.64	46.32	47.21	48.02						
	20		B.	50.48	51.59	52.62	53.52	56.60						
	†21	Moon's 1st Limb - -	C.	16.39	17.40	18.36	19.32	20.30	31 18.47	0.24	28.44	16 31 46.68	- -	
	22		D.	40.48	43.66	44.52	45.44	46.41						
	23		B.	19.47	20.41	21.31	22.18	24.92						
	24	20 Ophiuchi - - - -	C.	42.65	43.60	44.50	45.44	46.26	41 44.51	0.22	28.43	16 42 12.73	— 7.25	
	25		D.	4.01	6.85	7.79	8.68	9.56						
	26		B.	54.12	0.43	6.91	14.52	34.17						
	27	ε Ursæ Minoris - - -	C.	42.47	50.32	56.67	2.90	9.59	59 56.61	0.17	28.42	17 0 24.86	+ 1.54	
	28		D.	19.46	39.21	46.47	53.00	58.92						
	29	A^1 Ophiuchi - - - -	E.	11.09	12.21	15.20	16.20	17.22	7 14.38	50.23	28.41	17 6 52.57	— 8.10	
	30		B.	37.70	38.64	39.58	40.58	43.56						
	31	θ Ophiuchi - - - -	C.	2.79	3.72	4.63	5.71	6.57	13 4.74	0.23	28.41	17 13 32.92	8.07	
	32		D.	25.89	29.02	29.92	30.93	31.87						
	33		B.	2.21	3.21	4.22	5.15	8.31						
	34	b Ophiuchi - - - -	C.	27.36	28.30	29.22	30.18	31.11	17 29.22	0.23	28.40	17 17 57.40	8.04	
	35		D.	50.12	53.24	54.30	55.21	56.20						
	36		B.	5.47	6.42	7.44	8.41	11.44						
	37	c^2 Ophiuchi - - - -	C.	30.40	31.46	32.34	33.29	34.23	22 32.37	0.23	28.40	17 23 0.55	8.04	
	38		D.	53.39	56.42	57.39	58.30	59.22						
	39		B	39.18	40.14	41.10	41.90	44.75						
	40	α Ophiuchi - - - -	C.	2.42	3.38	4.31	5.28	6.18	28 4.28	0.20	28.39	17 28 32.47	6.38	
	41		D.	23.89	26.61	27.42	28.32	29.34						
	42		B.	47.22	48.09	48.94	49.87	52.70						
	43	Weisse, 834 - - -	C.	10.49	11.42	12.30	13.18	13.93	42 12.28	0.22	28.38	17 42 40.45	7.43	
	44		D.	31.84	34.73	35.63	36.51	37.43						
	45		B.	23.81	24.78	25.74	26.70	29.78						
	46	B. A. C., 6161 - - -	C.	48.68	49.67	50.67	51.56	52.49	2 50.65	0.23	28.37	18 3 18.79	8.07	
	47		D.	11.54	14.64	15.63	16.57	17.50						
	48		B.	36.80	37.76	38.75	39.75	42.68						
	49	μ^1 Sagittarii - - - -	C.	1.27	2.20	3.10	4.05	4.91	5 3.16	— 0.23	+28.36	18 5 31.30	— 7.91	
	50		D.	23.78	26.63	27.58	28.58	29.50						
	51	δ Ursæ Minoris - - -	B.	55.00	10.50	27.00	41.50	26.00	16 50.20	- -	- -	- - - -	- -	
	52		D.	15.00	1.00	16.00	31.00	44.00						

18. Cloudy.
21. Through clouds.
Azimuth cor., for June 20, from δ Ursæ Minoris and μ^1 Sagittarii.

June 19. 16*h*. 15*m*. Image east 0. 14. Clamp west.
20. 18*h*. 30*m*. Image east 0. 13. Clamp west.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m*.	*n*.	*c*.
h.	s.	s.	s.	s.	s.
June 20, 17. 1	+ 28. 41	— 0. 051	— 0. 174	+ 0. 037	— 0. 036

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
	1		B.	34.09	34.97	35.92	36.81	39.56						
June 21	2	α Serpentis - - - -	C.	57.95	58.89	59.81	0.67	1.57	36 59.79	— 0.04	+29.09	15 37 28.85	— 6.43	R.
	3		D.	18.09	20.75	21.69	22.61	23.54						
	4		B.	40.61	44.96	49.47	53.82	7.29						
	5	ζ Ursæ Minoris - - -	C.	31.21	36.38	40.51	45.19	49.55	48 40.86	0.01	29.08	15 49 9.92	1.71	
	6		D.	14.84	28.02	32.86	37.10	41.04						
	7		B.	15.79	16.71	17.58	18.48	21.13						
	8	Weisse, 1092 - - -	C.	38.50	39.40	40.30	41.25	42.21	57 40.37	0.05	29.06	15 58 9.39	6.81	
	9		D.	59.52	2.27	3.21	4.18	5.08						
	10		A.	50.84	51.78	52.70	55.21	56.27						
	11		B.	13.71	14.65	15.51	16.46	19.12						
	12	δ Ophiuchi - - - -	C.	36.60	37.56	38.46	39.39	40.28	6 38.40	0.02	29.05	16 7 7.43	6.85	
	13		D.	57.70	0.44	1.39	2.28	3.23						
	14		E.	20.50	21.35	23.91	24.84	25.71						
	15		B.	32.02	33.05	34.09	35.11	38.60						
	16	Lacaille, 6818 - - -	C.	59.78	0.81	1.84	2.89	3.92	15 1.90	0.08	29.03	16 15 30.85	8.50	
	17		D.	25.38	28.61	29.61	30.87	31.88						
	18		A.	55.80	56.87	57.86	0.75	2.12						
	19		B.	21.78	22.71	23.63	24.68	27.77						
	20	τ Scorpii - - - - -	C.	47.53	48.45	49.40	50.42	51.49	26 49.45	0.03	29.01	16 27 18.43	8.10	
	21		D.	11.20	14.31	15.32	16.30	17.35						
	22		E.	36.93	37.94	40.90	41.85	42.83						
	23		B.	14.59	16.55	18.57	20.48	26.29						
	†24	Arg. Z. N., 125, 9, +62° 34′	C.	4.19	6.10	8.01	9.80	11.81	39 7.97	0.02	29.00	16 39 36.95	4.02	
	25		D.	49.40	55.34	57.41	59.49	1.46						
	26		B.	15.06	15.97	16.86	17.77	20.52						
	27	κ Ophiuchi - - - -	C.	38.18	39.10	39.97	40.82	41.76	50 39.93	0.04	28.98	16 51 8.92	6.44	
	28		D.	59.51	2.19	3.11	4.00	4.87						
	29		C.	53.37	55.55	57.25	58.77	0.26						
	30	Arg. Z. N., 125, 35 -	D.	34.79	40.50	42.49	44.18	46.26	55 41.67	44.82	28.97	16 55 25.82	4.20	
	31		E.	20.85	22.49	27.59	29.48	31.27						
	32		A.	30.66	31.58	32.61	35.69	36.74						
	33		B.	56.27	57.23	58.28	59.29	2.21						
	34	A^1 Ophiuchi - - - -	C.	21.64	22.56	23.54	24.60	25.60	6 23.60	0.03	28.95	17 6 52.52	8.11	
	35		D.	45.12	48.12	49.14	50.09	51.07						
	36		E	10.41	11.47	14.40	15.32	16.43						
	37		B.	40.78	41.77	42.67	43.71	46.76						
	38	39 Ophiuchi - - - -	C.	5.71	6.63	7.68	8.67	9.69	9 7.68	0.06	28.95	17 9 36.56	8.03	
	39		D.	28.71	31.67	32.60	33.60	34.57						
	40		C.	2.02	3.06	3.98	4.95	5.91						
	41	θ Ophiuchi - - - -	D.	25.19	28.13	29.11	30.12	31.10	12 28.68	24.76	28.94	17 12 32.86	8.09	
	42		E.	50.21	51.19	54.04	55.09	56.11						
	43		B.	31.78	32.73	33.65	34.51	37.29						
	44	Weisse, 409 - - -	C.	54.51	55.46	56.47	57.41	58.31	21 56.48	0.05	28.93	17 22 25.36	7.14	
	45		D.	15.67	18.50	19.42	20.30	21.22						
	46		A.	54.20	55.22	56.28	59.38	0.45						
	47		B.	20.51	21.42	22.38	23.41	26.57						
	48	Moon's 1st Limb - -	D.	46.61	47.51	48.57	49.50	50.58	37 48.51	0.03	28.90	17 38 17.38	- -	
	49		D.	10.60	13.54	14.55	15.65	16.58						
	50		E.	36.63	37.61	40.74	41.62	42.63						
	51		A.	49.64	50.74	51.80	54.73	55.89						
	52		B.	15.98	16.96	18.09	19.13	22.32						
	53	γ^1 Sagittarii - - - -	C.	42.20	43.29	44.31	45.39	46.42	55 44.25	-- 0.03	+28.87	17 56 13.09	— 8.49	
	54		D.	6.40	9.50	10.52	11.51	12.50						
	55		E.	32.59	33.60	36.60	37.61	38.57						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h. June 21, 16.8	s. + 28.99	s. — 0.096	s. — 0.009	s. + 0.037	s. — 0.036

24. Preceded and followed by smaller stars; same declination.

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Date.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
	1		A.	11.59	12.63	13.63	16.48	17.50						
	2		B.	36.19	37.17	38.16	39.13	41.86						
June 21	3	μ^1 Sagittarii - - - -	C.	0.64	1.51	2.45	3.39	4.38	5 2.50	— 0.03	+28.86	18 5 31.33	— 7.93	R.
	4		D.	23.17	25.98	27.01	28.04	29.01						
	5		E.	47.54	48.51	51.21	52.19	53.22						
	6		C.	53.96	54.91	55.82	56.86	57.78						
22	7	β^1 Scorpii - - - - -	D.	16.10	19.01	20.00	20.88	21.78	57 19.53	23.94	29.97	15 57 25.56	7.49	Y.
	8		E.	40.21	41.22	43.86	44.80	45.81						
	9		C.	51.17	52.09	52.96	53 91	54.81						
	10	e Irene, —20° 46′ - -	D.	13.52	16.43	17.40	18.37	19.29	6 16.94	24.15	29.98	16 6 22.78	7.61	
	11		E.	37.89	38.77	41.60	42.46	43.45						
	12		B.	30.94	32.07	33.13	34.25	37.45						
	13	Lacaille, 6818 - - -	C.	58.82	59.88	0.81	1.89	2.94	15 0.90	0.22	30.00	16 15 30.68	8.51	
	14		D.	24.21	27.79	28.71	29.83	30.84						
	15		B.	0.58	1.58	2.58	3.51	6.31						
	16	α Scorpii - - - - -	C.	25.81	26.92	27.87	28.88	29.81	20 27.86	0.20	30.00	16 20 57.67	7.97	
	17		D.	49.19	52.12	53.21	54.32	55.22						
	†18	(9) Phoceæ, —4° 7′ - -	C.	20.64	21.54	22.56	23.36	24.27	27 22.47	0.16	30.01	16 27 52.32	6.96	
	19		B.	16.97	17.87	18.85	19.74	22.41						
	20	Lalande, 30671 - -	C.	39.80	40.81	41.68	42.59	43.44	44 41.69	0.16	30.04	16 45 11.56	7.04	
	21		D.	0.80	3.76	4.70	5.53	6.35						
	22		B.	52.86	53.82	54.84	55.87	58.84						
	23	Arg. Z, 388, 83 - -	C.	18.15	19.30	20.29	21.21	22.15	50 20.35	— 0.20	30.04	16 50 50.20	8.17	
	24		D.	41.98	44.88	46.04	47.09	47.95						
	25	B. A. C., 5769 - - -	C.	31.51	34.42	37.39	40.87	43.48	58 37.53	+ 0.03	30.06	16 59 7.62	2.44	
	26		C.	4.70	5.71	6.60	7.57	8.61						
	27	39 Ophiuchi - - - -	D.	27.60	30.60	31.71	32.62	33.59	9 31.18	— 24.74	30.07	17 9 36.41	8.04	
	28		E.	52.60	53.56	56.50	57.42	58.39						
	29		B.	35.77	36.87	37.85	38.85	41.84						
	30	θ Ophiuchi - - - -	C.	1.10	2.13	3.03	3.93	4.84	13 2.96	0.20	30.07	17 13 32.84	8.10	
	31		D.	24.12	27.15	28.04	28.98	29.92						
	32		B.	29.53	30.51	31.51	32.40	35.21						
	33	Lalande, 32045 - -	C.	54.74	55.63	56.52	57.40	58.38	28 56.49	0.20	30.10	17 29 26.39	8.15	
	34		D.	17.31	20.51	21.51	22.51	23.58						
	35		B.	39.81	41.20	42.66	44.04	48.28						
	36	30 Draconis - - - -	C.	15.72	17.13	18.44	20.23	21.39	45 18.66	0.07	30.12	17 45 48.71	4.75	
	37		D.	49.02	53.39	54.63	56.21	57.78						
	38		B.	15.08	15.92	17.10	17.91	21.10						
	39	γ^1 Sagittarii - - - -	C.	41.27	42.28	43.23	44.24	45.23	55 43.24	0.21	30.13	17 56 13.17	8.51	
	40		D.	5.36	8.61	9.46	10.44	11.44						
	41		A.	10.48	11.49	12.49	15.24	16.30						
	42		B.	34.90	35.94	37.08	37.90	40.90						
	43	μ^1 Sagittarii - - - -	C.	59.41	0.34	1.34	2.29	3.28	5 1.32	— 0.15	30.14	18 5 31.31	— 7.95	
	44		D.	21.88	24.81	25.72	26.70	27.60						
	45		E.	46.30	47.33	50.15	51.09	52.00						
	46		B.	54.00	10.00	24.00	39.00	23.00						
	47	δ Ursæ Minoris - - -	C.	18.50	32.50	48.00	2.00	18.00	16 47.90	+ 0.65	30.16	18 17 18.71	+ 12.17	
	48		D.	13.00	57.00	12.00	26.00	41.50						
	49	51 (Hev.) Cephei, S. P. -	C.	15.00	55.00	37.00	18.00	1.00	33 37.20	— 1.03	30.18	6 34 6.36	— 27.35	
	50		A.	51.88	52.84	53.83	56.80	57.88						
	51		B.	17.83	18.79	19.78	20.76	23.97						
	52	Moon's 2d Limb - -	C.	43.41	44.47	45.47	46.45	47.31	44 45.43	— 0.16	+30.20	18 45 15.47	- -	
	53		D.	7.28	10.34	11.31	12.22	13.25						
	54		E.	32.84	33.85	36.83	37.75	38.64						

18. Dim.
Azimuth cor., for June 22, from δ Ursæ Minoris and 51 (Hev.) Cephei, S. P.

June 21. 18*h*. 10*m*. Image west *r*. 0.03. Clamp west.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m*.	*n*.	*c*.
h. June 22, 17.4	s. + 30.09	s. + 0.081	s. — 0.118	s. + 0.082	s. — 0.036

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
June 22	1	σ Sagittarii	D.	34.44	37.74	38.76	39.77	40.68	46 50.69	— 37.74	+30.20	18 46 43.15	— 8.25	Y
	2		E.	0.00	0.98	3.86	4.88	5.83						
	3		B.	52.12	53.18	54.18	55.14	58.46						
	4	ζ Sagittarii	C.	18.45	19.58	20.51	21.52	22.51	53 20.50	0.21	30.21	18 53 50.51	8.47	
	5		D.	42.62	45.81	46.87	47.78	48.83						
	6		B.	37.76	38.68	39.60	40.50	43.45						
	7	π Sagittarii	C.	2.03	2.91	3.90	4.92	5.78	1 3.96	0.19	30.22	19 1 33.99	7.89	
	8		D.	24.59	27.41	28.36	29.27	30.18						
	9		C.	49.24	50.19	51.01	51.90	52.86						
	10	ω Aquilæ	D.	10.61	13.41	14.51	15.32	16.12	11 13 88	22.99	+30.23	19 11 21.12	6.43	
	11		E.	33 68	34.50	37.36	38.27	39.17						
	12		B.	20.22	21.16	22.05	22.89	25.54						
24	†13	γ Aquilæ	C.	43.24	44.21	45.17	46.07	46.87	39 45.16	0.10	— 2.47	19 39 42.59	6.47	R.
	14		D.	4.71	7.44	8.35	9.29	10.20						
	15		A.	47.49	48.48	49.39	51.98	53.10						
	16		B.	10.42	11.33	12.30	13.24	15.85						
	17	β Aquilæ	C.	33.50	34.47	35.38	36.24	37.19	48 35.26	— 0.07	2.46	19 48 32.73	— 6.61	
	18		D.	54.49	57.37	58.26	59.19	0.11						
	19		E	17.43	18.39	21.07	22.03	22.90						
	†20	λ Ursæ Minoris	C.	40.00	29.00	12.00	58.00	43.00	3 12.40	+ 2.20	2.44	20 3 12.16	+ 42.95	
	21		A.	29.32	30.25	31.25	34.20	35.20						
	22		B.	52.86	53.87	54.83	55.80	58.50						
	23	β Capricorni	C.	16.69	17.71	18.61	19.56	20.49	13 18.49	— 0.10	2.42	20 13 15.96	— 7.38	
	24		D.	38.49	41.19	42.18	43.10	43.89						
	25		E.	1.88	2.89	5.61	6.51	7.48						
	26		A.	12.31	13.21	14.22	16.87	18.10						
	27		B.	36.38	37.40	38.32	39.29	42.20						
	28	ρ Capricorni	C.	0.32	1.31	2.29	3.31	4.22	21 2.27	0.11	2.41	20 20 59.75	7.48	
	29		D.	22.55	25.40	26 32	27.21	28.15						
	30		E.	46.50	47.42	50.23	51.19	52.10						
	31		A.	1.44	2.41	3.35	6.26	7.32						
	32		B	26.08	27.04	27.91	28.90	31.69						
	33	Moon's 2d Limb	C.	50.38	51.38	52.30	53.21	54.12	41 52.21	0.11	2.38	20 41 49.72	- -	
	34		D.	12.60	15.72	16.72	17.62	18.54						
	35		E.	37.13	38.16	40.78	41.68	42.59						
	36		A.	50.56	51.50	52.50	55.46	56.50						
	37		B.	16.22	17.24	18.22	19.21	22.32						
	†38	32 Vulpeculæ	C.	41.69	42.67	43.64	44.79	45.80	48 43.82	0.04	2.37	20 48 41.41	5.80	
	39		D.	5.42	8.75	9.70	10.61	11.68						
	40		E	30.95	31.92	35.07	36.05	37.10						
	41		A.	24.31	25.30	26.23	28.91	30.10						
	42		B.	48.45	49.37	50.30	51.24	54.10						
	43	θ Capricorni	C.	12.30	13.26	14.26	15.25	16.17	58 14.12	0.11	2.36	20 58 11.65	7.25	
	44		D.	34.36	37.09	37.93	38.86	39.90						
	45		E.	58.09	59.08	1.83	2.72	3.62						
	46		A.	18.71	19.70	20.63	23.41	24.40						
	47		B.	42.20	43.18	44.11	45.07	47.60						
	†48	ν Aquarii	C	5.51	6.49	7.42	8.30	9.21	2 7.27	0.10	2.35	21 2 4 81	7.00	
	49		D.	26.79	29.49	30.49	31.44	32.39						
	50		E.	50.22	51.14	53.67	54.60	55.49						
	51		C.	51.79	52.80	53.75	54.80	55.80						
25	52	α Coronæ Borealis	D.	15.36	18.58	19.54	20.52	21.41	29 19.02	— 25.35	— 2.28	15 28 51.38	— 5.81	Y.
	53		E.	40.98	42.04	45.09	45.91	46.90						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m.	n.	c.
h. June 24, 20.1	s. — 2.44	s. + 0.088	s. — 0.076	s. + 0.082	s. — 0.036

13. Unsteady.
20. Unsteady.
38. Unsteady.
48. Unsteady.

Azimuth cor., for June 24, from δ Ursæ Minoris and 51 (Hev.) Cephei, S. P.

June 22. 19*h*. 25*m* Image east $\overset{r.}{0.04}$ Clamp west.
22. Shortened pendulum one division.
24. 21*h*. 10*m*. Image $\overset{r.}{0.00}$. Clamp west.

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension	Reduct'n to 1860.0.	Observer
1861.				s	s.	s.	s.	s.	m. s.	m. s.	s.	h. m s.	s.	
	1		C.	29.45	30.43	31.30	32.20	33.13						
June 25	2	α Serpentis	D.	50.65	53.43	54.36	55.18	56.06	37 53.90	— 22.76	— 2.30	15 37 28.84	— 6.44	Y.
	3		E.	13.54	14.47	17.16	18.09	18.99						
	4		B.	11.22	15.74	20.11	24.93	37.74						
	5	ζ Ursæ Minoris	C.	3.11	7.44	11.81	16.18	20.72	49 11.77	+ 0.05	2.31	15 49 9.51	1.45	
	6		D.	45.11	58.90	3.55	7.89	12.18						
	7		B.	2.15	2.99	3.97	4.94	7.80						
	8	β^1 Scorpii	C.	26.22	27.20	28.15	29.08	29.96	57 28.14	— 0.24	2.32	15 57 25.58	7.50	
	9		D.	48.48	51.41	52.33	53.25	54.12						
	10		C.	23.55	24.40	25.38	26.31	27.17						
	†11	e Irene, —20° 46′	D	46.10	48.87	49.84	50.78	51.72	6 49.38	24.20	2.34	16 6 22.84	7.62	
	12		E.	10.37	11.26	14.17	14.94	15.85						
	13		B.	49.40	50.51	51.55	52.60	56.08						
	14	Lacaille, 6781	C.	17.34	18.41	19.48	20.54	21.63	10 19.51	0.27	2.34	16 10 16.89	8.50	
	15		D.	43.08	46.45	47.50	48.47	49.57						
	16		B.	32.86	33.83	34.81	35.81	38.87						
	17	α Scorpii	C.	58.16	59.22	0.21	1.21	2.18	21 0.24	0.25	2.36	16 20 57.64	7.99	
	18		D.	21.72	24.74	25.71	26.68	27.63						
	19		A.	32.10	32.94	34.04	36.82	37.79						
	20		B.	55.28	56.18	57.01	57.99	0.71						
26	21	β Aquarii	C.	18.23	19.17	19.93	20.80	21.80	24 19.95	0.21	1.83	21 24 17.91	6.74	R.
	22		D.	39.31	42.10	42.89	43.82	44.71						
	23		E.	2.30	3.23	5.68	6.52	7.44						
	24		A.	38.65	39.52	40.58	43.20	44.23						
	25		B.	1.85	2.74	3.59	4.47	7.38						
	26	ξ Aquarii	C.	24.86	25.80	26.61	27.46	28.38	30 26.62	0.22	1.82	21 30 24.58	6.78	
	27		D.	46.16	48.83	49.80	50.65	51.50						
	28		E.	8.91	9.88	12.59	13.49	14.32						
	29		B.	22.20	23.27	24.28	25.28	28.30						
	30	16 Pegasi	C.	47.51	48.48	49.40	50.37	51.41	46 49.41	0.20	1.80	21 46 47.41	5.88	
	31		D.	10.61	13.59	14.54	15.48	16.50						
	32		A.	12.42	13.29	14.27	16.73	17.79						
	33		B.	35.86	36.72	37.72	38.63	41.54						
	34	39 Aquarii	C.	59.38	0.30	1.30	2.18	3.20	5 1.23	0.23	1.77	22 4 59.23	6.77	
	35		D.	21.00	23.77	24.73	25.69	26.70						
	36		E.	44.57	45.59	48.13	49.11	50.09						
	37		A.	13.24	14.22	15.20	17.86	18.85						
	38		B.	36.66	37.50	38.58	39.49	42.21						
	†39	Moon's 2d Limb	C.	0.43	1.31	2.21	3.10	3.97	22 2.00	0.22	1.75	22 22 0.03	- -	
	40		D.	21.71	24.57	25.51	26.41	27.27						
	41		E.	45.00	45.89	48.63	49.60	50.51						
	42		A.	30.64	31.59	32.48	34.88	35.97						
	43		B.	53.39	54.28	55.21	56.21	58.62						
	44	η Aquarii	C.	15.92	16.90	17.81	18.69	19.58	28 17.90	0.21	1.74	22 28 15.95	6.27	
	45		D.	37.05	39.75	40.71	41.62	42.62						
	46		E.	59.88	0.79	3.41	4.31	5.26						
	47		C.	13.68	14.71	15.57	16.49	17.39	15 27.06	— 11.64	1.40	15 15 14 01	— 6.99	Y.
27	48	Weisse, 254	D.	35.23	37.90	38.92	39.91	40.80						
	†49	B. A. C., 5140	C.	57.00	20.00	42.00	5.00	26.00	23 42.00	+ 1.06	1.40	15 23 41.66	+ 16.21	
	50		B.	25.28	26.23	27.22	28.22	31.23						
	51	α Coronæ Borealis	C	50.97	51.91	52.87	53.84	54.74	28 52.86	— 0.07	— 1.40	15 28 51.39	— 5.79	
	52		D.	14.31	17.47	18.57	19.58	20.48						

11. Dim.
39. Through clouds.
49. Unsteady.
June 25. Stars steady. *r.*
25. 16*h.* 30*m.* Image east 0.09. Clamp west.
26. Stars rather unsteady.
26. 22*h.* 35*m.* Image east *r.* 0.12. Clamp west.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
June 25, 15.8	— 2.31	— 0.084	— 0.169	+ 0.082	— 0.036
26, 21.9	— 1.79	+ 0.082	— 0.200	+ 0.082	— 0.036

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s	
June 27	1		B.	44.08	45.10	45.98	46.95	49.69						
	2	Lalande, 28617	C.	7.88	8.85	9.79	10.70	11.53	36 9.75	— 0.13	— 1.40	15 36 8.22	— 7.24	Y.
	3		D.	29.80	32.57	33.46	34.44	35.43						
	4		B.	43.14	44.18	45.23	46.14	48.87						
	5	B. A. C., 5278	C.	7.51	8.53	9.50	10.44	11.32	49 9.51	0.14	1.40	15 49 7.97	7.52	
	6		D.	30.08	33.10	33.98	34.85	35.73						
	7	β^1 Scorpii	D.	47.54	50.33	51.32	52.23	53.17	57 2.77	35.77	1.40	15 57 25.59	7.49	
	8		E.	11.60	12.50	15.41	16.36	17.20						
	9		C.	25.90	26.88	27.83	28.68	29.52						
	10	*d* Irene, —12° 53′	D.	47.65	50.48	51.39	52.27	53.12	7 50.83	23.11	1.40	16 7 26.32	7.25	
	11		E.	10.88	11.72	14.44	15.33	16.32						
	12		B.	31.81	32.87	33.88	34.81	37.84						
	13	*α* Scorpii	C.	57.20	58.14	59.19	0.19	1.10	20 59.20	0.15	1.40	16 20 57.64	7.98	
	14		D.	20.62	23.62	24.58	25.59	26.50						
	15	✡ (8) —26° 3′	C.	44.42	45.41	46.42	47.37	48.31	31 46.39	— 0.15	1.40	16 31 44.83	8.04	
	16		B.	15.05	17.13	19.40	20.98	22.08						
	17	✡ (8.9) +62° 36′	C.	4.91	6.78	8.49	10.49	12.36	38 8.66	+ 0.01	1.40	16 38 7.26	3.94	
	18		D.	50.53	56.27	58.30	0.04	2.07						
	19	Arg. Z. N., 125,9	D.	20.42	26.55	28.51	30.28	31.87	40 51.72	—1 12.93	1.40	16 39 37.38	3.94	
	20		E.	9.61	11.59	17.61	19.35	21.38						
	21		B.	45.61	46.51	47.35	48.20	51.09						
	22	*κ* Ophiuchi	C.	8.62	9.63	10.54	11.46	12.29	51 10.49	— 0.09	1.40	16 51 8.99	— 6.47	
	23		D.	29.89	32.74	33.61	34.51	35.32						
	24		B.	24.01	31.09	37.81	44.69	3.90						
	25	*ε* Urræ Minoris	C.	12.30	20.17	26.86	33.64	39.23	0 26.57	+ 0.27	1.41	17 0 25.43	+ 2.05	
	26		D.	48.72	9.12	15.88	22.08	29.02						
	27		C.	36.09	36.94	37.90	38.87	39.87						
	28	B. A. C., 5829	D.	59.27	2.09	3.09	4.13	5.11	10 2.59	— 24.69	1.41	17 9 36.48	— 8.09	
	29		E.	23.94	25.01	27.88	28.89	29.73						
	30		B.	7.46	8.36	9.29	10.25	13.30						
	31	*θ* Ophiuchi	C.	32.48	33.40	34.35	35.31	36.31	13 34.45	0.15	1.41	17 13 32.89	8.14	
	32		D.	55.69	58.63	59.67	0.69	1.54						
	33		B.	1.37	2.34	3.13	4.02	6.71						
	34	*ε* Pegasi	C.	24.41	25.49	26.33	27.13	27.87	37 26.29	0.09	1.42	21 37 24.78	6.29	
	35		D.	45.88	48.55	49.52	50.38	51.23						
	36		B.	48.38	49.40	50.30	51.18	54.11						
	37	Lalande, 43040	C.	12.41	13.38	14.27	15.30	16.12	58 14.39	0.14	1.42	21 58 12.83	6.95	
	38		D.	34.84	37.60	38.57	39.56	40.41						
	39		B.	9.80	10.66	11.59	12.43	15.27						
	40	*θ* Aquarii	C.	32.87	33.88	34.71	35.59	36.41	9 34.68	0.12	1.42	22 9 33.14	6.58	
	41		D.	54.09	56.82	57.82	58.67	59.60						
	42		B.	32.94	33.84	34.80	35.65	38.49						
	43	*ρ* Aquarii	C.	55.97	56.84	57.80	58.70	59.60	12 57.83	0.12	1.42	22 12 56.29	6.54	
	44		D.	17.39	19.97	20.89	21.87	22.73						
	45		B.	20.62	21.51	22.43	23.27	25.98						
	46	ζ^1 Aquarii	C.	43.30	44.27	45.16	46.07	46.87	21 45.11	0.11	1.42	22 21 43.68	6.34	
	47		D.	4.20	6.89	7.78	8.72	9.57						
	48		B.	52.92	53.81	54.78	55.58	58.30						
	49	*η* Aquarii	C.	15.66	16.58	17.48	18.43	19.26	28 17.52	0.11	1.42	22 28 15.99	6.30	
	50		D.	36 82	39.47	40.35	41.19	42.11						
	51		B.	11.54	12.45	13.31	14.12	16.96						
	52	*ζ* Pegasi	C.	34.44	35.39	36.33	37.24	38.07	34 36.36	— 0.09	— 1.42	22 34 34.84	— 6.08	
	53		D.	55.72	58.65	59.48	0.34	1.31						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h. June 27, 19.3	s. — 1.41	s. — 0.003	s. — 0.069	s. + 0.082	s. — 0.036

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s	s	m. s.	m. s.	s.	h. m. s.	s.	
	1		B.	34. 29	35. 23	36. 23	37. 29	40. 45						
June 27	2	α Piscis Australis - -	C.	0. 65	1. 78	2. 61	3. 71	4. 69	50 2. 73	— 0. 16	— 1. 42	22 50 1. 14	— 6. 78	Y.
	3		D.	25. 07	28. 22	29. 25	30. 30	31. 14						
	4		A.	25. 50	26. 44	27. 27	30. 13	31. 10						
	5		B.	48. 90	49. 81	50. 75	51. 67	54. 37						
	6	Moon's 2d Limb - -	C.	12. 20	13. 19	14. 15	14. 90	15. 75	8 13. 93	— 0. 08	1. 42	23 8 12. 43	- -	
	7		D.	33. 49	36. 32	37. 32	38. 27	39. 10						
	8		E.	56. 68	57. 55	0. 38	1. 14	1. 91						
	9		B.	10. 69	14. 33	19. 02	23. 15	36. 44						
29	10	ζ Ursæ Minoris - - -	C.	1. 36	6. 34	10. 80	14. 80	19. 19	49 10. 73	+ 0. 12	1. 50	15 49 9. 34	1. 18	
	11		D.	44. 98	58. 43	2. 73	7. 18	11. 46						
	12		B.	1. 02	2. 02	2. 92	3. 90	6. 72						
	13	β^1 Scorpii - - - - -	C.	25. 31	26. 30	27. 24	28. 10	28. 92	57 27. 17	— 0. 17	1. 51	15 57 25. 49	7. 48	
	14		D.	47. 56	50. 41	51. 40	52. 41	53. 34						
	15	Arg. Z., 213,5 - - -	E.	56. 60	57. 49	0. 26	1. 18	2. 16	59 59. 54	48. 37	1. 52	15 59 9. 65	7. 60	
	16		C.	27. 13	28. 11	28. 93	29. 91	30. 84						
	17	b Iris, —24° 47′ - -	D	50. 12	53. 11	54. 10	55. 01	56. 00	7 53. 62	24. 86	1. 53	16 7 27. 24	7. 82	
	18		E.	15. 09	16. 12	18. 97	20. 00	20. 90						
	19		B.	35. 24	36. 23	37 21	38. 16	41. 08						
	20	Arg. Z., 297,84 - -	C.	59. 22	0. 17	0. 96	1. 86	2. 82	15 1. 01	0. 16	1. 54	16 14 59. 31	7. 45	
	21		D.	21. 16	23. 90	24. 87	25. 71	26. 58						
	22		B.	32. 10	33. 08	34. 06	34. 91	38. 07						
	23	α Scorpii - - - - -	C	57. 40	58. 39	59 37	0. 29	1. 34	20 59. 42	0. 18	1. 55	16 20 57. 69	7. 97	
	24		D.	20. 84	23. 88	24. 89	25. 83	26. 81						
	25		B.	45. 77	46. 70	47. 58	48. 51	51. 30						
	26	κ Ophiuchi - - - -	C.	8. 87	9. 85	10. 65	11. 59	12. 35	51 10. 66	0. 12	— 1. 58	16 51 8. 96	6. 46	
	27		D.	29. 93	32. 78	33. 81	34. 71	35. 57						
	28		A.	58. 52	59. 55	0. 44	3. 19	4. 19						
	29		B.	21. 68	22. 60	23. 49	24. 34	27. 11						
July 3	30	α Serpentis - - - -	C.	44. 54	45. 49	46. 34	47. 29	48. 19	36 46. 37	0. 16	+42. 56	15 37 28. 77	6. 38	R.
	31		D.	5. 62	8. 33	9. 33	10. 28	11. 16						
	32		E.	28. 52	29. 51	32. 28	33. 19	34. 09						
	33		B.	27. 69	31. 49	35. 63	39. 58	53. 48						
	34	ζ Ursæ Minoris - - -	C.	17. 67	22. 59	26. 59	31. 32	35. 67	48 26. 90	0. 09	42 58	15 49 9. 38	0. 84	
	35		D.	0. 52	13. 81	18. 14	22. 50	26. 78						
	36		B.	2. 26	3. 21	4. 08	5. 01	7. 62						
	37	Weisse, 1092 - - -	C.	24. 71	25. 73	26. 71	27. 61	28. 58	57 26. 79	0. 20	42. 59	15 58 9. 18	6. 78	
	38		D.	45. 91	48. 82	49. 67	50. 54	51. 39						
	39		B.	0. 50	1. 40	2. 29	3. 19	5. 75						
	40	δ Ophiuchi - - - -	C.	23. 01	24. 02	24. 90	25. 84	26. 74	6 25. 01	0. 20	42. 61	16 7 7. 43	6. 83	
	41		D.	44. 27	46. 98	47. 91	48. 76	49. 66						
	42		B	4. 41	5. 52	6. 63	7. 68	10. 73						
	43	Lacaille, 6781 - - -	C.	32. 30	33. 38	34. 41	35. 61	36. 61	9 34. 49	0. 22	42. 61	16 10 16. 88	8. 46	
	44		D.	58. 03	1. 41	2. 52	3. 51	4. 58						
	45		B	18. 41	19. 54	20. 69	21. 70	24. 44						
	46	Lacaille, 6818 - - -	C.	46. 47	47. 39	48. 30	49. 29	50. 38	14 48. 34	0. 22	42. 62	16 15 30. 73	8. 49	
	47		D.	11. 75	15. 12	16. 17	17. 17	18. 22						
	48		C.	24. 01	25. 01	25. 97	26. 80	27. 66						
	49	✪ (8) —4° 6′ - - -	D.	45. 19	47. 64	48. 51	49. 39	50. 29	25 48. 24	22. 66	42. 64	16 26 8. 22	6. 94	
	50		E.	7. 80	8. 64	11. 30	12. 24	13. 19						
	51		B.	54. 56	55. 57	56. 56	57. 64	0. 89						
	52	ζ Herculis - - - -	C.	21. 35	22 38	23. 42	24. 50	25. 51	35 23. 46	— 0. 18	+42. 65	16 36 5. 93	— 5. 56	
	53		D.	46. 11	49. 34	50. 32	51. 37	52. 42						

June 27. 21*h.* 30*m.* Image east 0. 05 (*r.*). Clamp west.
29. Night cloudy.
29. 17*h.* 10*m.* { Image east 0. 08. Clamp west. / Image east 0. 05. Clamp east. }
Azimuth cor., for July 3, from δ Ursæ Minoris and 51 (Hev.) Cephei, S P.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s	s.	s.	s.
June 29, 16.4	— 1. 55	— 0. 080	— 0. 101	+ 0. 082	— 0. 036
July 3, 19.3	+ 42. 90	+ 0. 092	— 0. 158	+ 0. 036	— 0. 036

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
	1		B.	11.79	12.82	13.80	14.70	17.67						
July 3	2	18 Ophiuchi - - - -	C.	36.80	37.80	38.80	39.81	40.71	40 38.80	— 0.21	+42.66	16 41 21.25	— 7.98	R.
	3		D.	59.86	2.91	3.93	4.85	5.83						
	4		B.	11.93	12.90	13.79	14.61	17.22						
	5	Weisse, 254 - - -	C.	34.67	35.70	36.68	37.57	38.50	14 36.62	0.20	42.71	17 15 19.13	7.18	
	6		D.	55.92	58.54	59.47	0.41	1.33						
	7		B.	22.69	23.67	24.69	25.65	28.90						
	8	*d* Ophiuchi - - - -	D.	13.05	16.04	17.29	18.31	19.29	17 50.96	— 0.22	42.72	17 18 33.46	8.49	
	9		B.	18.19	19.15	20.07	20.90	23.62						
	10	Weisse, 409 - - -	C.	41.04	42.07	43.03	43.98	44.84	21 31.69	+ 11.07	42.72	17 22 25.49	7.19	
	11		B.	24.87	25.75	26.63	27.61	30.41						
	12	*α* Ophiuchi - - - -	C.	48.29	49.25	50.14	51.10	52.02	27 50.08	— 0.19	42.73	17 28 32.62	— 6.43	
	13		D.	9.80	12.40	13.32	14.28	15.29						
	14		B.	40.00	55.00	10.00	26.00	11.00						
	15	*δ* Ursæ Minoris - - -	C.	3.00	20.00	34.00	49.00	5.00	16 34.93	— 0.25	42.81	18 17 17.48	+ 13.05	
	16		D.	0.00	45.00	0.00	15.00	31.00						
	17	51 (Hev.) Cephei, S. P. -	C.	2.00	43.00	24.00	6.00	46.00	33 24.20	+ 0.17	42.83	6 34 7.21	— 28.40	
	18		B.	53.27	54.31	55.30	56.33	59.67						
	19	*ζ* Cygni - - - - -	C.	19.61	20.78	21.61	22.48	23.57	6 21.59	— 0.18	43.07	21 7 4.47	5.92	
	20		D.	43.81	46.88	47.83	48.71	49.69						
	21		A.	19.96	22.42	24.42	31.12	32.94						
	22		B.	19.32	21.51	23.65	25.52	33.57						
	23	2d Comet, '61, +66° 0′	C.	19.50	21.68	23.71	26.67	28.91	10 24.19	0.10	43.10	22 11 7.19	- -	
	24		D.	14.71	21.98	24.51	26.53	28.81						
	25		E.	14.49	17.35	24.66	27.13	29.69						
	26		A.	45.50	46.48	47.42	49.87	50.93						
	27		B.	8.55	9.51	10.42	11.33	14.10						
	†28	*η* Aquarii - - - -	C.	31.38	32.31	33.31	34.33	35.27	27 33.14	0.16	43.19	22 28 16.16	6.45	
	29		D.	52.31	54.94	55.97	56.90	57.83						
	30		E.	15.12	16.09	18.64	19.50	20.40						
	31		A.	23.37	24.47	25.48	28.47	29.58						
	32		B.	49.61	50.68	51.71	52.75	55.88						
	33	*α* Piscis Australis - -	C.	16.39	17.36	18.30	19.33	20.27	49 18.26	0.18	+43.22	22 50 1.31	6.96	
	34		D.	40.59	43.52	44.51	45.58	46.67						
	35		E.	7.19	8.17	11.26	12.25	13.21						
	36		B.	3.89	6.10	8.46	10.16	16.78						
4	37	Arg. Z., 123, 2 - -	C.	57.92	0.28	2.19	4.41	6.51	5 2.21	0.17	—17.01	16 4 45.04	3.58	Y.
	38		D.	47.59	54.13	56.35	58.19	0.25						
	39		B.	39.09	40.12	41.06	42.04	44.91						
	40	*σ* Scorpii - - - - -	C.	4.23	5.23	6.26	7.20	8.10	13 6.22	0.31	17.01	16 12 48.90	7.86	
	41		D.	27.48	30.52	31.39	32.38	33.29						
	42		B.	13.54	14.41	15.31	16.16	18.92						
	43	*υ* Ophiuchi - - - -	C.	36.41	37.39	38.28	39.19	40.12	20 38.33	0.28	17.01	16 20 21.03	7.10	
	44		D.	57.72	0.55	1.44	2.30	3.20						
	45		B.	10.88	11.72	12.59	13.52	16.20						
	46	B. A. C., 5529 - - -	C.	33.98	34.98	35.88	36.79	37.70	25 35.91	0.26	17.01	16 25 18.64	6.34	
	47		D.	55.52	58.32	59.30	0.18	1.06						
	48		B.	27.81	29.18	30.43	31.91	36.42						
	49	✪ (6.7) +49° 9′ - -	C.	2.66	3.99	5.39	6.65	8.08	35 5.42	0.21	17.02	16 34 48.20	4.79	
	50		D.	34.77	38.91	40.25	41.77	43.12						
	51		B.	41.47	42.90	44.38	45.67	49.52						
	52	42 Herculis - - - -	C.	16.11	17.39	18.68	20.10	21.50	35 18.95	— 0.21	—17.02	16 35 1.72	— 4.79	
	53		D.	48.51	52.44	53.85	55.17	56.50						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
July 3, 19.3	+ 42.90	+ 0.092	— 0.158	+ 0.030	— 0.036
4, 17.1	— 17.03	— 0.022	— 0.236	+ 0.072	— 0.036

28. Unsteady.

July 3. 22*h*. 35*m*. Image east *r.* 0.12. Clamp west.
Azimuth cor., July 4, from *δ* Ursæ Minoris and μ^1 Sagittarii.

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s	s.	
	1		C.	13.48	15.71	18.00	20.14	22.04						
July 4	2	*g* Draconis	D.	3.22	9.20	11.90	13.88	15.87	41 10.71	— 52.89	—17.02	16 40 0.81	— 3.52	Y.
	3		E.	56.81	59.07	5.09	7.22	9.10						
	4		B.	1.37	2.23	3.17	4.09	6.79						
	5	κ Ophiuchi	C.	24.41	25.31	26.21	27.19	28.02	51 26.24	0.26	17.02	16 51 8.96	6.45	
	6		D.	45.63	48.38	49.39	50.30	51.13						
	7		B.	8.71	11.74	15.11	18.39	27.82						
	8	Groombridge, 2420	C.	29.28	32.19	35.21	38.59	41.67	4 35.48	0.11	17.03	17 4 18.34	1.98	
	9		D.	43.08	52.56	56.01	59.40	2.47						
	10		B.	23.13	24.18	25.16	26.17	29.09						
	11	θ Ophiuchi	C.	48.27	49.35	50.21	51.19	52.22	13 50.26	0.31	17.03	17 13 32.92	8.15	
	12		D.	11.40	14.51	15.40	16.29	17.33						
	13		C.	34.58	35.58	36.40	37.33	38.11						
	14	Weisse, 254	D.	55.68	58.51	59.41	0.23	1.10	15 58.94	22.82	17.03	17 15 19.09	7.19	
	15		E.	18.59	19 44	22.23	23.04	23.86						
	16		B.	51.06	51.97	53.08	54.06	57.11						
	17	c^2 Ophiuchi	C.	16.06	17.04	18.03	18.98	19.88	23 18.02	0.31	17.03	17 23 0.68	8.13	
	18		D.	39.06	41.98	43.07	44.03	44.88						
	19		A.	23.54	25.30	26.89	31.32	33.20						
	20	ν^1 Draconis	C.	43.97	45.49	47.14	48.63	50.38	29 46.90	0.11	17.04	17 29 29.76	4.45	
	21		E.	0.39	2.15	6.80	8.37	10.00						
	22	ν^2 Draconis	B.	9.10	10.70	12.40	13.62	18.71	29 52.32	0.20	17.04	17 29 35.09	4.43	
	23		D.	26.10	31.04	32.20	33.93	35.43						
	24		B.	17.59	19.06	20.21	21.70	25.33						
	25	ι Herculis	C.	50.41	51.72	53.07	54.37	55.61	35 53.15	0.21	17.04	17 35 35.89	5.02	
	26		D.	20.87	25.03	26.12	27.44	28.66						
	27		B.	52.11	53.09	53.91	54.67	57.38						
	28	γ Ophiuchi	C.	14.59	15.55	16.48	17.42	18.25	41 16.57	0.27	17.04	17 40 59.26	6.85	
	29		D.	35.91	38.41	39.35	40.30	41.16						
	30		B.	26.61	28.38	30.00	31.41	35.52						
	31	30 Draconis	C.	2.69	4.30	5.71	7.08	8.68	46 5.78	0.20	17.04	17 45 48.54	4.72	
	32		D.	36.11	40.43	41.86	43.33	44.63						
	33		B.	13.14	14.08	15.08	16.09	18.95						
	†34	B. A. C., 6132	C.	38.39	39.38	40.29	41.32	42.19	0 40.28	0.31	17.05	18 0 22.92	8.32	
	35		D.	1.41	4.50	5.39	6.48	7.48						
	36		B.	22.44	23.42	24.39	25.31	28.17						
	37	μ^1 Sagittarii	C.	47.00	47.93	48.83	49.82	50.68	5 48.80	0.30	17.05	18 5 31.45	8.05	
	38		D.	9.38	12.21	13.19	14.19	15.11						
	39	δ Ursæ Minoris	B.	39.00	53.00	9.00	25.50	10.50	17 33.90	- -	- -	- - - -	- -	
	40		D.	57.00	43.00	59.00	14.00	29.00						
	41		B.	48.32	49.32	50.32	51.32	54.42						
6	42	α Scorpii	C.	13.73	14.72	15.66	16.70	17.61	21 15.73	0.12	17.96	16 20 57.65	7.96	
	43		D.	37.10	40.20	41.19	42.20	43.21						
	44		B.	24.91	26.31	27.50	28.69	32.47						
	45	σ Herculis	C.	55.96	57.29	58.44	59.70	0.92	29 58.47	0.03	17.97	16 29 40.48	5.11	
	46		D.	24.51	28.22	29.57	30.73	31.88						
	47		B.	55.08	56.12	57.28	5ᵐ.21	1.49						
	48	ζ Herculis	C.	21.88	23.00	23.99	25.08	26.01	36 24.04	0.04	17.97	16 36 6.03	5.55	
	49		D.	46.53	49.87	51.00	52.08	52.99						
	50		B.	2.16	3.04	3.95	4.86	7.61						
	51	κ Ophiuchi	C.	25.11	26.10	26.99	27.91	28.78	51 27.03	— 0.07	—17.97	16 51 8.98	— 6.45	
	52		D.	46.54	49.23	50.15	51.03	51.93						

34. Followed by a small star.

July 4. 18*h*. 25*m*. Image east 0. 15*r*. Clamp west.
6. 17 25 Image east 0. 04. Clamp west. Night cloudy.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m*.	*n*.	*c*.
h.	s.	s.	s.	s.	s.
July 4, 17.1	— 17.03	— 0.022	— 0.236	+ 0.072	— 0.036
6, 16.6	— 17.97	— 0.015	— 0.045	+ 0.072	— 0.036

Hosted by Google

DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R Ascension	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
	1		B.	48.20	49.21	50.18	51.21	54.27						
July 8	2	α Scorpii - - - - -	C.	13.53	14.47	15.50	16.50	17.58	21 15.57	— 0.28	—17.61	16 20 57.68	— 7.97	R.
	3		D.	36.97	39.91	41.00	42.03	43.02						
	4		B.	24.38	25.41	26.34	27.31	30.51						
	5	B. A. C., 5556 - - -	C.	50.51	51.52	52.51	53.44	54.48	30 52.50	0.28	17.61	16 30 34.60	8.25	
	6		D.	14.52	17.64	18.59	19.64	20.64						
	7		B.	54.90	55.92	57.03	58.13	1.22						
	8	ζ Herculis - - - -	C.	21.61	22.72	23.71	24.81	25.90	36 23.80	0.20	17.61	16 36 5.99	5.54	
	9		D.	46.35	49.63	50.63	51.75	52.70						
	10		B.	8.08	8.97	9.85	10.82	13.93						
	11	B. A. C., 5687 - - -	C.	33.17	34.18	35.17	36.17	37.21	47 35.14	0.27	17.61	16 47 17.26	8.08	
	12		D.	56.37	59.31	0.30	1.30	2.32						
	13		C.	41.22	42.31	43.39	44.38	45.41						
	14	✡ —31° 38′ - - -	D.	5.81	9.01	10.23	11.23	12.21	55 9.63	— 26.60	17.61	16 54 25.42	— 8.54	
	15		E.	32.59	33.62	36.63	37.70	38.73						
	16	ε Ursæ Minoris - - -	C.	28.54	35.30	41.60	47.92	55.02	0 41.68	+ 0.04	17.61	17 0 24.11	+ 3.12	
	17		B	12.74	13.81	14 84	15.86	19.02						
	18	B. A. C., 5833 - - -	C.	39.42	40.45	41.48	42.48	43.51	10 41.50	— 0.29	17 60	17 10 23.61	— 8.61	
	19		D.	3.88	7.13	8.28	9.27	10.29						
	20		C.	57.67	58.70	59.61	0.66	1.69						
	21	B. A. C., 5858 - - -	D.	20.74	23.90	24.84	25.79	26.69	15 24.35	24.99	17.60	17 14 41.75	8.25	
	22		E.	45.80	46.73	49.81	50.80	51.77						
	23		B.	49.40	50.50	51.46	52.57	55.80						
	†24	Lacaille, 7312 - - -	C.	16.79	17.87	18.83	19.91	20.97	21 18.91	0.29	17.60	17 21 1.01	8.82	
	25		D.	42.11	45.38	46.29	47.38	48.42						
	26		B.	21.68	22.69	23.60	24.47	27.70						
	27	B. A. C., 5946 - - -	C.	47.30	48.37	49.33	50.30	51.32	29 49.37	0.28	17.60	17 29 31.48	8.45	
	28		D.	11.09	14.08	15.23	16.19	17.18						
	29		B.	29.78	30.80	31.76	32.73	36.02						
	†30	B. A. C., 5983 - - -	C.	55.89	57.07	58.04	59.09	0.09	34 58.12	— 0.28	17.60	17 34 40.24	8.61	
	31		D.	20.39	23.58	24.58	25.51	26.55						
	32	B. A. C., 6023 - - -	B.	23.10	24.09	25.04	25.95	29.04	41 25.44	+ 24.30	17.60	17 41 32.14	8.27	
	33	B. A. C., 6063 - - -	B.	50.15	51.15	52.16	53.11	56.30	48 17.97	— 0.28	17.60	17 48 0.08	8.54	
	34		D.	39.76	42.80	43.75	44.79	45.73						
	35		B	2.95	3.92	4.87	5.88	9.05						
	36	γ^1 Sagittarii - - - -	C	29.16	30.20	31.20	32.19	33.19	56 31.18	0.28	17.60	17 56 13.30	8.66	
	37		D.	53.30	56.47	57.46	58.41	59.46						
	38	B. A. C., 6132 - - -	B.	13.74	14.72	15.63	16.68	19.65	0 40.97	0.27	17.60	18 0 23.09	8.37	
	39		D.	2.19	5.26	6.23	7.28	8.29						
	40		B.	3.00	3.98	4.81	5.68	8.39						
11	41	δ Ophiuchi - - - -	C.	25.72	26.62	27.52	28.34	29.21	7 27.55	— 0.05	20.09	16 7 7.41	6.81	Y.
	42		D.	46.70	49.45	50.37	51.29	52.13						
	43		B.	50.30	51.31	52.21	53.17	56.30						
	44	α Scorpii - - - - -	C.	15.61	16.77	17.70	18.71	19.67	21 17.67	+ 0.01	20.07	16 20 57.61	7.95	
	45		D.	39.18	42.10	43.12	44.01	44.91						
	46		B	52.52	53.71	54.80	55.83	59.23						
	47	✡ (8) —33° 56′ - -	C.	19.92	21.11	22.22	23.35	24.38	26 22.23	0.03	20.07	16 26 2.20	8.49	
	48		D.	45.44	48.75	49.71	50.74	51.77						
	49		B.	6.92	8.09	9.29	10.28	13.50						
	50	Lacaille, 6891 - - -	C.	34.49	35.65	36.61	37.54	38.39	27 36.53	0.03	20.07	16 27 16.50	8.50	
	51		D.	59.56	2.90	3.89	4.91	5.96						
	52		B	40.08	41.18	42.15	43.27	46.61						
	53	Lacaille, 6931 - - -	C.	7.23	8.39	9.45	10.42	11.28	33 9.34	+ 0.03	—20.06	16 32 49.31	— 8.47	
	54		D.	32.15	35.34	36.56	37.51	38.50						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate	*m.*	*n.*	*c.*
h. July 8, 17.0	s. — 17.61	s. + 0.006	s. — 0.202	s. + 0.072	s. — 0.036

24. Dim.
30. Dim. *r.*
July 8. Image east 0.13. Clamp west.

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s	m. s.	m. s.	s.	h. m. s.	s.	
July 11	1	✡ (7.8) —32° 52′	C.	14.72	15.80	16.85	17.91	18.97	33 16.85	+ 0.03	—20.06	16 32 56.81	— 8.47	Y.
	2		C.	3.61	4.82	5.81	6.91	7.90						
	3	Lacaille, 6976	D.	28.64	32.11	33.12	34.01	35.08	38 32.50	— 26.59	20.06	16 37 45.85	8.49	
	4		E.	55.89	56.90	0.02	0.89	1.87						
	5		B.	0.57	1.62	2.60	3.63	6.80						
	6	Lacaille, 7023	C.	27.76	28.80	29.90	30.90	31.84	44 29.81	+ 0.03	20.05	16 44 9.79	8.57	
	7		D.	52.70	55.98	56.98	57.98	59.10						
	† 8	B. A. C., 5756	B.	34.85	35.89	37.04	38.06	40.97	57 50.26	+ 12.96	20.04	16 57 43.18	8.43	
	† 9		C.	1.11	2.15	3.16	4.19	5.16						
	10		B.	16.87	17.90	18.85	19.76	22.46						
	11	α Herculis	C.	40.44	41.37	42.29	43.24	44.07	8 42.27	— 0.09	20.03	17 8 22.15	6.33	
	12		D.	2.02	4.90	5.74	6.65	7.52						
	13		B.	25.90	26.89	27.88	28.91	32.06						
	14	θ Ophiuchi	C.	51.04	52.10	53.07	54.11	54.91	13 53.06	+ 0.01	20.03	17 13 33.04	8.18	
	15		D.	14.12	17.25	18.22	19.20	20.26						
	16		B.	27.50	28.42	29.35	30.28	32.86						
	†17	α Ophiuchi	C.	50.86	51.83	52.81	53.68	54.58	28 52.72	— 0.09	20.02	17 28 32.62	6.46	
	18		D.	12.41	15.20	16.11	17.04	17.93						
	19		B.	31.80	32.80	33.73	34.70	38.16						
	20	B. A. C., 5983	C.	58.09	59.09	0.10	1.16	2.12	35 0.17	+ 0.02	20.01	17 34 40.18	8.62	
	21		D.	22.40	25.59	26.60	27.61	28.66						
	22		B.	43.46	44.56	45.59	46.50	49.50						
	23	B. A. C., 6015	C.	8.95	10.05	11.12	12.06	13.01	40 11.10	0.01	20.01	17 39 51.11	8.42	
	24		D.	32.70	35.72	36.81	37.74	38.79						
	25		B.	48.14	49.21	50.31	51.29	54.34						
	26	B. A. C., 6044	C.	13.98	14.98	15.94	16.90	17.88	45 15.94	0.01	20.00	17 44 55.95	8.46	
	27		D.	37.57	40.79	41.70	42.54	43.51						
	28		B.	46.69	47.71	48.65	49.71	52.87						
	29	B. A. C., 6072	C.	12.73	13.87	14.81	15.80	16.76	50 14.77	0.02	20.00	17 49 54.79	8.57	
	30		D.	36.61	39.89	40.81	41.87	42.82						
	31		B.	5.25	6.36	7.38	8.31	11.40						
	32	Arg. Z, 175, 10	C.	30.20	31.33	32.40	33.43	34.33	54 32.36	+ 0.01	19.99	17 54 12.37	8.29	
	33		D.	53.27	56.47	57.42	58.42	59.42						
	34	Arg. Z., 175, 12	E.	19.41	20.49	23.56	24.44	25.42	55 22.66	— 49.15	19.99	17 54 13.52	8.29	
	35		B	17.68	18.74	19.80	20.69	23.62						
	36	7 Sagittarii	C.	42.77	43.71	44.76	45.78	46.61	54 44.73	+ 0.01	19.99	17 54 24.75	8.30	
	37		D.	5.81	8.83	9.80	10.74	11.68						
	38		B	39.67	40.54	41.48	42.42	45.20						
	39	d Melpomene —17° 14′	C.	3.12	4.19	5.03	5.92	6.85	2 53.44	+ 11.72	19.99	18 2 45.18	7.89	
	40		B.	31.46	32.50	33.41	34.26	37.09						
	41	e Melpomene —17° 24′	C.	55.42	56.42	57.31	58.16	59.01	6 57.22	— 0.01	19.98	18 6 37.22	7.91	
	42		D.	17.16	20.20	21.12	21.93	22.82						
	43		B.	41.91	42.91	43.91	44.88	47.82						
	44	Lalande, 33694	C.	6.01	6.94	7.85	8.72	9.56	12 7.86	0.01	19.98	18 11 47.87	7.94	
	45		D.	28.00	30.94	31.90	32.85	33.73						
	46		B.	17.37	18.24	19.20	20.13	22.94						
	47	Lalande, 33966	C.	41.25	42.27	43.09	44.09	45.07	18 43.15	0.01	19.97	18 18 23.17	7.97	
	48		D.	3.24	6.10	7.10	8.13	9.10						
	49		B.	13.69	14.69	15.52	16.41	19.22						
	50	B. A. C., 6293	C.	37.70	38.61	39.47	40.52	41.38	23 39.56	0.01	19.97	18 23 19.58	8.01	
	51		D.	59.69	2.74	3.69	4.61	5.46						
	52		B.	26.11	27.00	27.99	28.88	31.75						
	53	Lalande, 34354	C.	49.98	51.03	52.01	52.93	53.83	27 52.00	— 0.01	—19.96	18 27 32.02	— 8.01	
	54		D.	12.27	15.14	16.10	17.05	17.90						

8–9. Cloudy.
17. Through clouds.
Azimuth cor., for July 11, from 51 (Hev.) Cephei, S. P., and θ Ophiuchi.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m.	n.	c.
h.	s.	s.	s.	s.	s.
July 11, 17.5	—20.02	+ 0.052	— 0.019	— 0.143	— 0.036

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s	s.	m. s	m. s.	s.	h. m. s.	s	
	1		C.	55.16	56.11	57.08	57.98	58.86						
July 11	2	*f* Melpomene —18° 56′	D.	17.31	20.19	21.18	22.12	23.04	31 20.71	— 23.69	—19.96	18 30 37.05	— 8.03	Y.
	3		E.	41.33	42.23	45.14	46.02	46.90						
	†4	51 (Hev.) Cephei, S. P.	B.	55.00	34.00	19.00	59.00	5.00	38 27.45	- -	- -	- - - -	- -	
	†5		C.	3.50	44.00	26.00	- -	- -						
	6		B.	51.01	51.96	53.14	54.21	57.78						
	7	β^1 Lyræ	C.	18.21	19.32	20.34	21.41	22.49	45 20.39	— 0.15	19.95	18 45 0.28	5.74	
	8		D.	43.48	46.64	47.62	48.62	49.61						
	9		B.	37.01	38.09	39.16	40.14	43.64						
	10	Lacaille, 8045	C.	4.33	5.49	6.60	7.59	8.69	7 6.62	+ 0.03	19.93	19 6 46.72	9.02	
	11		D.	29.80	33.08	34.19	35.23	36.21						
	12		B.	16.35	17.23	18.09	19.04	21.92						
	13	ω Aquilæ	C.	39.36	40.30	41.30	42.18	42.94	11 41.33	— 0.08	19.93	19 11 21.32	6.66	
	14		D.	0.90	3.71	4.68	5.58	6.41						
	15		B.	34.13	35.20	36.18	37.14	40.19						
12	16	B. A. C., 5240	C.	0.13	1.16	2.14	3.22	4.23	44 2.24	0.13	19.82	15 43 42.29	7.84	R
	17		D.	24.19	27.39	28.48	29.41	30.49						
	18		B.	12.80	13.75	14.79	15.76	18.88						
	19	B. A. C., 5266	C	38.21	39.32	40.40	41.31	42.25	47 40.27	0.13	19.82	15 47 20.31	7.70	
	20		D.	1.80	4.68	5.71	6.67	7.68						
	21		B.	56.80	57.68	58.60	59.61	2.48						
	22	B. A. C., 5294	C.	22.18	23.11	24.01	25.07	26.08	51 24.09	0.13	19.81	15 51 4.14	7.75	
	23		D.	45.52	48.56	49.57	50.57	51.50						
	24		B.	53.73	54.60	55.60	56.33	59.44						
	25	B. A. C., 5314	C.	18.83	19.81	20.74	21.78	22.80	55 20.83	0.13	19.80	15 55 0.89	7.71	
	26		D.	42.17	45.20	46.20	47.12	48.11						
	27		B.	19.38	20.30	21.34	22.27	24.91						
	28	β^1 Scorpii	C	43.46	44.40	45.31	46.37	47.32	57 45.37	0.14	19.80	15 57 25.44	7.43	
	29		D	5.80	8.41	9.48	10.46	11.40						
	30		C.	53.52	54.49	55.43	56.38	57.38						
	31	B. A. C., 5345	D.	16.53	19.58	20 45	21.40	22.38	0 19.98	24.68	19.80	15 59 35.51	7.68	
	32		E.	41.34	42.35	45.19	46.17	47.18						
	33		B	41.13	42.14	43.14	44.13	47.16						
	34	B. A. C., 5381	C.	6.61	7.79	8.79	9.73	10.73	4 8.83	0.13	19.79	16 3 48.90	7.90	
	35		D.	30.67	33.62	34.59	35.60	36.56						
	36		B.	2.79	3.80	4.71	5.53	8.16						
	37	δ Ophiuchi	C.	25.52	26.49	27.34	28.30	29.23	7 27.40	0.14	19.78	16 7 7.47	6.80	
	38		D.	46.40	49.28	50.20	51.16	52.09						
	39		B	48.58	49.72	50.75	51.81	54.79						
	40	B. A. C., 5441	C	14.82	15.84	16.81	17.92	19.06	12 16.86	0.13	19.78	16 11 56.95	8.06	
	41		D	38.80	41.95	43.03	44.01	45.03						
	42		B.	50.11	51.12	52.10	53.12	56.19						
	43	α Scorpii	C.	15.50	16.51	17.46	18.51	19.44	21 17.49	0.13	19.76	16 20 57.60	7.94	
	44		D.	38.91	41.88	42.86	43.86	44.81						
	45		B.	6.98	8.07	9.03	10.03	13.32						
	46	Lacaille, 6891	C.	34.20	35.31	36.41	37.50	38.58	27 36.45	0.13	19.75	16 27 16.57	8.49	
	47		D.	59.73	2.83	3.88	4.94	5.98						
	48		B.	5.42	6.41	7.44	8.53	11.61						
	49	Lacaille, 6922	C.	32.71	33.72	34.72	35.83	36.85	31 34.79	0.13	19.74	16 31 14.92	8.49	
	50		D.	58.00	1.09	2.17	3.14	4.25						
	51		B.	15.10	16.06	17.07	18.11	21.18						
	52	B. A. C., 5603	C.	40.97	41.98	43.01	44.08	45.00	36 42.98	— 0.13	—19.73	16 36 23.11	— 8.18	
	53		D.	4.77	7.81	8.86	9.81	10.83						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h. July 12, 16 7	s — 19.73	s. + 0.103	s. — 0.109	s. — 0.030	s. — 0.036

4–5. Unsteady.

July 11. 19*h.* 20*m.* Image east $\overset{r.}{0.12}$. Clamp west.

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
	1		B	14.24	15.14	16.01	17.10	20.01						
July 12	†2	18 Ophiuchi - - - -	C.	39.17	40.22	41.19	42.15	43.18	41 41.12	— 0.13	—19.73	16 41 21.26	— 7.99	R.
	3		D.	2.21	5.07	6.06	7.03	7.98						
	4		B.	40.71	47.32	54.37	0.27	21.18						
	5	ε Ursæ Minoris - - -	C.	- -	36.93	43.62	50.89	57.08	0 44.72	1.71	19.69	17 0 23.31	+ 3.53	
	6		D	5.81	25.37	34.03	39.62	46.41						
	7		B.	12.92	13.99	14.97	16.08	19.18						
	8	B. A. C., 5824 - - -	C.	39.90	40.90	41.81	42.86	43.83	9 41.91	0.13	19.68	17 9 22.10	— 8.65	
	9		D.	4.78	7.88	8.83	9.81	10.85						
	10		B	25.81	26.76	27.69	28.71	31.68						
	11	θ Ophiuchi - - - -	C.	50.77	51.73	52.68	53.69	54.71	13 52.81	0.13	19.67	17 13 33.01	8.16	
	12		D.	13.89	17.07	18.08	18.99	19.96						
	13		B.	33.09	34.10	35.10	36.12	39.43						
	14	B. A. C, 5924 - - -	C	59.79	0.81	1.84	2.88	3.95	26 1.96	0.13	19.65	17 25 42.17	8.69	
	15		D	24.60	27.77	28.89	30.01	30.98						
	16		B.	56.71	57.69	58.63	59.61	2.66						
	17	μ Herculis - - - -	C.	22.37	23.31	24.29	25.31	26.38	41 24.36	0.16	19.62	17 41 4.57	5.81	
	18		D.	46.02	49.10	50.10	51.13	52.10						
	19		B.	17.41	18.41	19.40	20.31	23.29						
17	20	ι¹ Libræ - - - - -	C.	41.37	42.43	43.36	44.30	45.30	4 43.42	0.16	21.44	15 4 21.82	6.97	
	21		D	3.73	6.53	7.57	8.47	9.48						
	22		B.	31.94	32.92	33.83	34.78	37.49						
	23	β Libræ - - - - -	C.	54.96	55.97	56.90	57.84	58.70	9 56.88	0.17	21.44	15 9 35.27	6.63	
	24		D.	16.19	19.02	20.00	20.91	21.80						
	25		A.	1.12	2.12	3.09	5.81	6.81						
	26		B.	24.84	25.88	26.79	27.73	30.59						
	27	ζ¹ Libræ - - - - -	C.	48.54	49.56	50.48	51.45	52.44	20 50.50	0.13	21.45	15 20 28.92	7.19	
	28		D.	10.44	13.39	14.31	15.25	16.21						
	29		E	34.21	35.17	37.77	38.71	39.73						
	30		B.	45.09	46.04	47.06	48.08	51.04						
	31	α Coronæ Borealis - -	C.	10.71	11.68	12.71	13.82	14.70	29 12.73	0.19	21.45	15 28 51.08	5.56	
	32		D.	34.30	37.44	38.39	39.37	40.48						
	33		B.	25.49	26.42	27.34	28.27	30.93						
	34	α Serpentis - - - -	C.	48.38	49.30	50.20	51.16	52.07	37 50.27	0.18	21.45	15 37 28.64	6.28	
	35		D.	9.59	12.31	13.29	14.13	15.13						
	36		B.	0.09	1.12	2.28	3.39	6.92						
	37	Lacaille, 6590 - - -	C.	28.27	29.44	30.51	31.59	32.61	48 30.40	0.16	21.46	15 48 8.78	8.20	
	38		D.	54.02	57.40	58.43	59.38	0.58						
	39		C.	33.71	34.80	35.74	36.85	37.88						
	40	B. A. C., 5299 - - -	D.	58.31	1.20	2.47	3.52	4.51	52 1.91	26.23	21.46	15 51 14.22	7.93	
	41		E.	24.60	25.74	28.84	29.79	30.76						
	†42	Lacaille, 6657 - - -	D.	17.18	20.52	21.74	22.87	23.97	56 21.26	28.41	21.46	15 55 31.39	8.41	
	43		A.	38.94	39.84	40.89	43.91	45.09						
	44		B.	5.13	6.07	7.09	8.06	11.11						
	45	Moon's 1st Limb - -	C.	30.94	31.91	32.86	33.90	34.88	6 32.86	0.13	21.46	16 6 11.27	- -	
	46		D	54.78	57.70	58.78	59.83	0.79						
	47		E.	20.67	21.61	24.67	25.57	26.57						
	48		A.	18.10	19.08	20.02	22.92	23.96						
	49		B.	43.31	44.27	45 27	46.31	49.21						
	50	σ Scorpii - - - - -	C.	8.46	9.35	10.39	11.42	12.42	13 10.44	— 0.13	—21.47	16 12 48.85	— 7.80	
	51		D.	31.79	34.72	35.74	36.77	37.65						
	52		E.	56.90	57.83	0.77	1.70	2.69						

2. Preceded a few seconds by a smaller star.
42. Key does not record well.

July 12. 17*h*. 50*m*. Image east 0.12 (*r*). Clamp west.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m*.	*n*.	*c*.
h. July 17, 15.9	s — 21.46	s. — 0.023	s. — 0.136	s. — 0.030	s. — 0.036

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
	1		A.	26.46	27.47	28.49	31.36	32.44						
	2		B.	51.81	52.86	53.91	54.85	57.80						
July 17	3	α Scorpii - - - - -	C.	17.28	18.39	19.30	20.28	21.25	21 19.24	— 0.13	—21.47	16 20 57.65	— 7.91	R.
	4		D.	40.60	43.71	44.73	45.73	46.68						
	5		E.	5.96	6.98	9.94	10.96	11.89						
	6		B.	50.63	51.83	52.95	54.39	57.71						
	7	Lacaille, 6888 - - -	C.	20.48	21.76	22.88	24.01	25.27	27 22.84	0.16	21.47	16 27 1.21	8.93	
	8		D.	47.85	51.67	52.66	53.70	54.80						
	9		B.	24.35	25.40	26.51	27.61	30.93						
	10	Lacaille, 6923 - - -	C.	52.81	53.90	54.95	56.04	57.20	31 55.00	0.16	21.48	16 31 33.36	8.71	
	11		D.	19.08	22.39	23.50	24.58	25.72						
	12		B.	28.07	29.28	30.30	31.31	34.53						
	13	Lacaille, 6965 - - -	C.	55.41	56.43	57.52	58.56	59.59	36 57.52	0.16	21.48	16 36 35.88	8.51	
	14		D.	20.44	23.88	24.88	25.81	26.81						
	15		C.	38.24	39.31	40.30	41.28	42.47						
	16	Lacaille, 6987 - - -	D.	3.40	6.65	7.71	8.77	9.84	41 7.26	27.11	21.48	16 40 18.67	8.55	
	17		E.	30.87	31.82	35.08	36.09	37.13						
	18		B.	2.34	3.39	4.49	5.51	8.73						
	19	Lacaille, 7023 - - -	C.	29.30	30.40	31.45	32.47	33.68	44 31.53	0.16	21.48	16 44 9.89	8.53	
	20		D.	54.38	57.58	58.71	59.76	0.78						
	21		B.	5.50	6.60	7.57	8.47	11.20						
	22	κ Ophiuchi - - - -	C.	28.80	29.82	30.72	31.70	32.57	51 30.65	0.18	21.48	16 51 8.99	— 6.41	
	23		D.	49.92	52.85	53.87	54.72	55.51						
	24		B.	41.17	49.33	55.38	1.73	22.41						
	†25	ε Ursæ Minoris - - -	C.	31.75	38.40	45.72	51.84	57.82	0 44.98	0.63	21.49	17 0 22.87	+ 4.13	
	26		D.	7.61	27.81	34.67	41.50	47.62						
	27		C.	52.53	53.50	54.41	55.39	56.20						
20	28	α Ophiuchi - - - -	D	14.12	17.00	18.00	18.82	19.70	29 17.43	23.17	21.69	17 29 32.57	— 6.44	Y.
	29		E.	37.42	38.45	41.09	42.01	42.88						
	30	Lalande, 32559 - -	C.	42.70	43.74	44.70	45.71	46.61	43 44.69	0.19	21.68	17 43 22.82	8.36	
	31		C.	44.81	46.36	47.72	49.16	50.52						
	32	γ Draconis - - - -	D.	18.54	23.02	24.51	25.90	27.10	54 23.73	36.25	21.66	17 53 25.82	4.57	
	33		E.	55.09	56.61	0.84	2.14	3.61						
	34		B.	13.98	14.89	15.91	16.83	19.80						
	35	B. A. C., 6161 - - -	C.	38.84	39.80	40.73	41.76	42.71	3 40.79	0.19	21.65	18 3 18.94	8.30	
	36		D	1.66	4.75	5.70	6.71	7.73						
	37	δ Ursæ Minoris - - -	B.	41.00	56.50	13.00	28.00	14.00	17 37.25	- -	- -	- - - -	- -	
	38		D.	1.00	46.50	2.50	18.00	32.00						
	39		B	19.10	19.99	21.03	21.87	24.59						
	40	Lalande, 33966 - -	C.	42.99	43.97	44.88	45.77	46.73	18 44.89	0.19	21.63	18 18 23.07	8.01	
	41		D.	5.10	7.91	8.86	9.82	10.74						
	42		B	34.88	35.92	36.87	37.87	40.77						
	43	B. A. C., 6336 - - -	C.	59.48	0.47	1.37	2.30	3.24	30 1.38	0.19	21.62	18 29 39.57	8.22	
	44		D.	21.95	25.02	25.98	26.87	27.76						
	45		A.	31.54	32.47	33.46	36.41	37.44						
	46		B.	57.13	58.18	59.16	0.21	3.31						
	47	φ Sagittarii - - - -	C.	22.71	23.81	24.80	25.81	26.77	37 24.75	0.15	21.61	18 37 2.99	8.60	
	48		D.	46.29	49.38	50.47	51.42	52.35						
	49		E.	12.02	12.97	16.00	16.90	17.85						
	50		C.	49.54	50.53	51.49	52.46	53.41						
	51	29 Sagittarii - - - -	D.	11.89	14.97	15.87	16.80	17.63	42 15.40	— 24.11	—21.61	18 41 29.69	— 8.18	
	52		E.	36.22	37.22	40.12	40.99	41.87						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
July 17, 15.9	— 21.46	— 0.023	— 0.136	— 0.030	— 0.036
20, 19.1	— 21.58	+ 0.072	— 0.165	— 0.030	— 0.036

25. Unsteady.

July 17. Image east 0.16 *r.* Clamp west.
Azimuth cor., for July 20, from δ Ursæ Minoris and h^2 Sagittarii.

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
	1		A.	12.23	13.22	14.18	17.15	18.21						
	2		B.	37.70	38.72	39.70	40.68	43.83						
July 20	3	σ Sagittarii - - - -	C.	3.21	4.27	5.23	6.20	7.16	47 5.18	— 0.15	—21.60	18 46 43.43	— 8.56	Y.
	4		D.	26.70	29.70	30.72	31.69	32.63						
	5		E.	52.13	53.10	56.20	57.10	57.93						
	6		B	1.50	2.48	3.39	4.24	7.12						
	7	ζ Aquilæ - - - - -	C.	24.92	25.91	26.81	27.73	28.57	59 26.81	0.21	21.58	18 59 5.02	6.60	
	8		D.	46.59	49.35	50.26	51.19	52.10						
	9		A.	22.71	23.64	24.51	27.29	28.38						
	10		B.	46.52	47.48	48.42	49.31	52.12						
	11	υ Sagittarii - - - -	C.	10.27	11.26	12.11	13.00	13.87	14 12.09	0.16	21.57	19 13 50.36	7.95	
	12		D.	32.09	34.96	35.87	36.79	37.77						
	13		E.	55.86	56.81	59.58	0.37	1.24						
	14		C.	10.10	11.14	12.08	13.07	13.93						
	15	Moon's 1st Limb - -	D.	33.45	36.52	37.47	38.40	39.33	17 36.99	25.16	21.56	19 16 50.26	- -	
	16		E.	58.70	59.67	2.67	3.63	4.67						
	17		B.	14.02	14.94	16.03	16.97	20.01						
	18	h^2 Sagittarii - - - -	C.	39.20	40.15	41.17	42.15	43.11	28 41.16	0.19	21.55	19 28 19.42	8.47	
	19		D.	2.39	5.41	6.30	7.29	8.23						
	†20	Lalande, 37221 - -	D.	26.17	29.17	30.21	31.23	32.12	32 41.82	36.53	21.55	19 31 43.74	8.29	
	†21		E.	50.65	51.64	54.76	55.64	56.59						
	22		B.	0.88	1.83	2.68	3.58	6.30						
	23	α Aquilæ - - - - -	C.	23.84	24.90	25.64	26.59	27.43	44 25.70	0.21	21.53	19 44 3.97	6.92	
	24		D.	45.00	47.86	48.80	49.70	50.51						
	25		B.	30.16	31.07	31.93	32.80	35.42						
	26	β Aquilæ - - - - -	C.	52.83	53.84	54.73	55.64	56.47	48 54.75	0.20	21.53	19 48 33.02	6.96	
	27		D.	13.98	16.77	17.66	18.57	19.39						
	28		B.	19.19	20.10	21.09	21.92	24.83						
23	29	ω Aquilæ - - - - -	C.	42.49	43.38	44.24	45.20	46.02	11 44.29	0.11	22.85	19 11 21.33	6.74	
	30		D.	3.67	6.62	7.61	8.55	9.38						
	31		B.	31.67	32.72	33.56	34.54	37.13						
	32	δ Aquilæ - - - - -	C.	54.57	55.47	56.33	57.27	58.10	18 56.38	0.10	22.85	19 18 33.42	7.11	
	33		D.	15.56	18.43	19.28	20.09	20.92						
	34		B.	2.38	3.20	4.09	4.98	7.80						
	35	h Melpomene, —19° 53′ -	C.	26.38	27.22	28.18	29.14	30.08	26 28.25	— 0.09	22.85	19 26 5.30	8.18	
	36		D.	48.49	51.58	52.48	53.38	54.33						
	37	γ Aquilæ - - - - -	B	41.21	42.00	42.88	43.71	46.50	39 54.61	+ 11.28	22.86	19 39 43.04	6.82	
	38		C.	4.06	5.12	5.94	6.94	7.78						
	39	Lalande, 37873 - -	B.	19.68	20.63	21.53	22.49	25.47	47 45.76	— 0.09	22.86	19 47 22.80	8.14	
	40		D.	6.13	9.12	9.91	10.81	11.83						
	41		B	58.74	59.67	60.66	61.50	64.41						
	42	Lalande, 38164 - -	C.	22.81	23.79	24.70	25.51	26.53	54 24.72	0.10	22.87	19 54 1.76	8.13	
	43		D.	44.95	47.91	49.01	49.91	50.77						
	44		C.	25.31	26.36	27.24	28.15	29.09						
	45	Lalande, 38290 - -	D.	47.44	50.48	51.56	52.50	53.39	57 51.01	23.81	22.87	19 57 4.32	— 8.10	
	46		E.	11.68	12.61	15.48	16.41	17.39						
	47	λ Ursæ Minoris - - -	C	7.00	57.00	40.00	31.00	10.00	3 41.00	3.59	22.87	20 3 14.53	+ 42.42	
	48		B.	23.57	24.59	25.60	26.52	29.42						
	49	σ Capricorni - - - -	C.	47.91	48.79	49.71	50.71	51.60	11 49.77	0.10	22.88	20 11 26.79	— 8.10	
	50		D.	10.23	13.01	14.07	14.97	15.80						
	51		B.	27.86	28.82	29.78	30.76	33.63						
	52	Arg. Z, 240, 98 - -	C.	52.69	53.67	54.60	55.52	56.49	21 54.58	— 0.09	—22.88	20 21 31.61	— 8.27	
	53		D.	15.33	18.44	19.50	20.35	21.32						

20–21. Dim.

July 20. 20*h*. 0*m*. Image east 0.19 (*r*). Clamp west. Battery works badly.
Azimuth cor., for July 23, from δ Ursæ Minoris and h^2 Sagittarii of 20th.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate	*m*.	*n*.	*c*.
h. July 23, 20.8	s — 22.89	s — 0.029	s. — 0.068	s. — 0.030	s. — 0.036

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s	s.	h. m. s.	s.	
July 23	1	B. A. C., 7184 - - -	C.	45.00	28.00	6.00	47.00	23.00	31 5.80	— 3.08	—22.89	20 30 39.84	+ 28.48	Y.
	2	✲ (7.8) — 18° 6′ - -	D.	26.41	29.38	30.36	31.38	32.21	44 41.70	35.45	22.89	20 43 43.35	— 7.93	
	3		E.	50.50	51.32	54.30	55.13	55.98						
	4		B.	30.20	31.19	32.16	33.09	35.89						
	5	✲ (9) — 12° 55′ - -	C.	53.78	54.73	55.57	56.32	57.11	50 55.51	0.10	22.89	20 50 32.52	7.68	
	6		D.	15.20	18.01	18.93	19.80	20.71						
	7		B	59.83	0.74	1.61	2.58	5.72						
	8	ζ Cygni - - - - -	C.	26.03	26.92	27.93	28.94	29.95	7 27.92	0.13	22.90	21 7 4.89	6.30	
	9		D.	49.88	53.23	54.26	55.13	56.08						
	10		A.	7.58	8.65	9.64	12.56	13.42						
	11		B.	31.74	32.53	33.51	34.41	37.37						
	12	ι Capricorni - - - -	C.	55.59	56.61	57.44	58.31	59.29	14 57.43	0.06	22.91	21 14 34.46	7.77	
	13		D.	17.54	20.48	21.43	22.37	23.30						
	14		E.	41.40	42.42	45.15	46.08	46.94						
	15		B	16.80	17.57	18.52	19.39	22.17						
	16	β Aquarii - - - - -	C	39.61	40.61	41.50	42.37	43.23	24 41.49	0.10	22.91	21 24 18.48	7.32	
	17		D.	60.81	63.67	64.52	65.39	66.21						
	18		A.	60.48	61.55	62.50	65.51	66.51						
	19		B.	24.80	25.81	26.63	27.49	30.29						
	20	γ Capricorni - - - -	C.	48.42	49.43	50.45	51.29	52.20	32 50.39	0.06	22.92	21 32 27.41	7.70	
	21		D.	10.53	13.47	14.43	15.29	16.30						
	22		E.	34.41	35.34	37.93	38.96	39.86						
	23		B	54.34	55.50	56.61	57.50	60.78						
	†24	μ Cygni - - - - -	C.	20.38	21.45	22.41	23.48	24.39	38 22.39	0.12	22.92	21 37 59.35	6.44	
	25		D.	44.20	47.20	48.21	49.21	50.20						
	26		A.	17.75	18.70	19.61	22.39	23.40						
	27		B.	41.36	42.28	43.21	44.08	46.98						
	†28	Moon's 2d Limb - -	C.	5.00	5.89	6.79	7.75	8.69	1 6.74	0.07	22.93	22 0 43.74	- - -	
	29		D.	26.48	29.39	30.31	31.21	32.15						
	30		E.	50.17	51.00	53.74	54.69	55.60						
	31		A.	8.80	9.70	10.53	13.36	14.32						
	32		B.	31.96	32.89	33.80	34.70	37.43						
	33	θ Aquarii - - - - -	C.	54.91	55.85	56.79	57.82	58.79	9 56.79	0.07	22.93	22 9 33.79	7.23	
	34		D.	16.20	18.92	19.85	20.80	21.54						
	35		E.	39.34	40.28	42.93	43.72	44.64						
	36		A.	8.10	9.10	9.86	12.46	13.61						
	37		B.	30.81	31.79	32.79	33.70	36.41						
	†38	γ Aquarii - - - - -	C.	53.76	54.71	55.64	56.52	57.27	14 55.51	0.07	22.94	22 14 32.50	7.05	
	39		D.	14.62	17.58	18.43	19.29	20.10						
	40		E.	37.30	38.39	40.94	41.79	42.76						
	41		B.	15.17	16.06	16.91	17.79	20.42						
	42	η Aquarii - - - - -	C.	37.81	38.77	39.61	40.57	41.50	28 39.70	— 0.10	22.94	22 28 16.66	6.97	
	43		D.	59.01	61.70	62.61	63.41	64.21						
24	44	α Aquarii - - - - -	B.	41.10	41.91	42.75	43.57	46.36	58 54.26	+ 11.13	22.83	21 58 42.56	7.08	
	45		C.	3.54	4.55	5.32	6.30	7.20						
	46		A.	8.71	9.70	10.55	13.21	14.19						
	47		B.	31.88	32.76	33.71	34.64	37.31						
	48	θ Aquarii - - - - -	C.	54.70	55.77	56.60	57.60	58.42	9 56.67	— 0.05	22.82	22 9 33.80	7.23	
	49		D.	16.11	18.90	19.90	20.72	21.52						
	50		E.	39.09	40.00	42.72	43.50	44.50						
	51	γ Aquarii - - - - -	D.	14.61	17.22	18.09	18.97	19.85	15 28.98	— 33.71	—22.82	22 14 32.45	— 7.05	
	52		E.	37.41	38.33	40.93	41.71	42.66						

CORRECTIONS, &c.

Date.	Error of clock	Hourly rate.	*m.*	*n.*	*c.*
h. July 23, 20.8	s. — 22.89	s. — 0.029	s. — 0.068	s — 0.030	s. — 0.036

24. Close double; took first and larger.
28. Very tremulous.
38. Unsteady.

July 23. 22*h.* 35*m.* Image east *r.* 0.08. Clamp west.

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DATE	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer
1861.				s	s.	s.	s	s.	m. s.	m. s.	s	h. m. s.	s.	
	1		A.	51.90	52.83	53.74	56.50	57.54						
	2		B.	15.08	15.92	16.81	17.66	20.46						
July 24	3	η Aquarii	C.	37.66	38.60	39.43	40.40	41.22	28 39.48	— 0.05	—22.82	22 28 16 61	— 6 97	Y
	4		D.	58.61	1.42	2.31	3.21	3.92						
	5		E.	21.49	22.29	25.09	25.90	26.84						
	6		B.	15.83	16.69	17.62	18.50	21.33						
	7	Weisse, 675	C.	38.83	39.70	40.63	41.58	42.49	32 40.57	0.08	22.81	22 32 17.68	7.12	
	8		D.	59.81	62.59	63.56	64.41	65.40						
	9	✡ (6) —33° 35′	C.	39.11	40.06	41.08	42.13	43.19	42 54.56	13.53	22.81	22 42 18.22	7.76	
	10		D.	4.20	7.40	8.44	9.47	10.51						
	11		B.	45.12	46.27	47.34	48.33	51.59						
	12	γ Picis Australis	C.	12.56	13.67	14.62	15.64	16.72	45 14.66	0.07	22.81	22 44 51.78	7.74	
	13		D.	37.72	41.18	42.08	43.09	43.95						
	14		B.	15.86	16.75	17.72	18.71	21.34						
	15	Moon's 2d Limb	C.	39.10	40.00	40.90	41.83	42.72	48 40.96	0.08	22.81	22 48 18.06	- -	
	16		D.	0.73	3.35	4.30	5.11	5.93						
	17		B.	50.13	51.09	52.09	52.90	55.66						
	18	β Piscium	C.	12.79	13.80	14.66	15.60	16.36	57 14.72	0.09	22.81	22 56 51.83	6.82	
	19		D.	33.85	36.59	37.51	38.50	39.34						
	20		B.	59.57	60.52	61.44	62.36	65.10						
	21	γ Piscium	C.	22.38	23.33	24.20	25.13	25.97	10 24.21	0.08	22.80	23 10 1.32	6.85	
	22		D.	43.30	46.15	47.00	47.92	48.81						
	23		B.	32.42	33.52	34.52	35.31	38.10						
	24	B. A. C., 8129	C.	55.75	56.70	57.51	58.41	59.21	13 57.41	0.08	22.80	23 13 34.53	6.89	
	25		D.	16.83	19.32	20.23	21.21	22.11						
	26		B.	50.34	51.29	52.32	53.13	55.83						
	27	ι Piscium	C.	13.23	14.10	14.94	15.86	16.73	20 15.01	0.08	22.80	23 19 52.12	6.78	
	28		D.	34.20	36.98	37.85	38.73	39.58						
	29		B.	31.72	32.60	33.60	34.60	37.36						
	30	B. A C., 8196	C.	56.29	57.22	58.10	59.02	59.97	24 58.17	0.08	22.80	23 24 35.30	7.03	
	31		D.	18.86	21.90	22.82	23.80	24.72						
	32		B.	19.94	21.00	21.96	22.90	25.76						
25	33	α^1 Herculis	C.	43.55	44.50	45.47	46.39	47.22	8 45.42	0.18	23.19	17 8 22.05	6.25	
	34		D.	5.10	7.93	8.87	9.90	10.81						
	35		B	29.39	30.37	31.28	32.27	35.20						
	36	θ Ophiuchi	C.	54.42	55.50	56.41	57.44	58.35	13 56.39	0.24	23.19	17 13 32.96	8.14	
	37		D.	17.41	20.45	21.52	22.50	23.41						
	38		C.	40.64	41.71	42.53	43.52	44.50						
	39	Weisse, 254	D.	1.80	4.60	5.62	6.49	7.29	16 5.07	22.75	23.19	17 15 19.13	7.17	
	40		E	24.55	25.56	28.17	29.15	29.90						
	41	✡ (9) —17° 41′	C.	0.96	1.95	2.93	3.98	4.81	22 2.93	0.23	23.19	17 21 39.50	7.77	
	42	✡ (8) —17° 41′	C.	18.36	19.33	20.29	21.29	22.16	22 20.29	0.23	23.19	17 21 56.86	7.77	
	43		B.	30.63	31.61	32.50	33.50	36.40						
	44	α Ophiuchi	C.	54.07	54.92	55.80	56.85	57.71	28 55.92	0.19	23.20	17 28 32.53	6.41	
	45		D.	15.45	18.48	19.42	20.30	21.16						
	†46	✡ (9) ±19° 21′	C.	31.43	32.37	33.24	34.21	35.18	33 33.29	— { 0.18 / 0.23 }	23.20	17 33 { 9.90 / 9.85 }	6.13 / 7.91	
	47	Weisse, 846	B.	20.55	21.50	22.55	23.39	25.96	43 34.32	+ 11.32	23.21	17 43 22.44	7.66	
	48		C.	43.97	44.96	45.85	46.82	47.68						
	49	Weisse, 857	C	7.54	8.43	9.28	10.22	11.19	44 21.00	— 11.78	23.21	17 43 46.01	7.67	
	50		D.	29.21	32.31	33.14	33.90	34.76						
	51	B. A. C, 6063	E.	10 90	12.05	15.04	15.91	16.90	49 14.16	1 0.00	23.21	17 47 59.95	8.52	
	52		B.	58.33	59.40	60.47	61.51	64.55						
	53	B. A. C., 6120	C.	24.50	25.55	26.46	27.45	28.51	58 26.45	— 0.25	—23.21	17 58 2.99	— 8.58	
	54		D.	48.35	51.49	52.41	53.44	54.40						

46. Is the declination north or south?

July 24. 23*h*. 30*m*. Image east $\overset{r.}{0.05}$. Clamp west.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m*.	*n*.	*c*.
h.	s.	s.	s.	s.	s.
July 24, 22.6	— 22.81	+ 0.018	— 0.048	— 6.030	— 0.036
25, 17.6	— 23.20	— 0.034	— 0.168	+ 0.081	— 0.036
23.2	— 23.17	— 0.015	- -	- -	- -

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m s.	s.	h. m. s.	s.	
	1		B.	3.90	4.90	5.79	6.70	9.72						
July 25	†2	✡ (9) —17° 13′ - -	C.	27.81	28.91	29.67	30.55	31.49	2 29.66	— 0.23	—23.22	18 2 6.21	— 7.91	Y.
	3		D.	49.72	52.54	53.50	54.46	55.30						
	4		B.	34.72	35.72	36.68	37.59	40.50						
	5	*e* Melpomene, —17° 24′ -	C.	58.56	59.62	60.47	61.31	62.27	7 0.47	0.23	23.22	18 6 37.02	7.93	
	6		D.	20.40	23.40	24.32	25.30	26.25						
	7		B.	28.87	29.93	30.83	31.80	34.73						
	8	Lalande, 33684 - -	C.	53.71	54.72	55.66	56.69	57.59	11 55.66	0.24	23.22	18 11 32.19	8.30	
	9		D.	16.59	19.53	20.53	21.39	22.31						
	10	δ Ursæ Minoris - - -	C.	6.50	21.50	35.50	50.50	5.00	17 35.80	- -	- -	- - - -	- -	
	11		B.	19.00	19.99	20.89	21.79	24.70						
	12	*b* Eunomia, —22° 47′ -	C.	43.59	44.50	45.49	46.42	47.34	21 45.52	0.24	23.23	18 21 22.06	8.25	
	13		D.	6.31	9.30	10.24	11.20	12.13						
	14	Lalande, 34229 - -	C.	48.62	49.51	50.40	51.35	52.23	24 50.42	0.24	23.23	18 24 26.95	8.26	
	15		C.	21.53	22.62	23.60	24.70	25.84						
	16	β Lyræ - - - - -	D.	46.60	50.08	51.10	52.06	53.11	45 50.50	26.93	23.24	18 45 0.33	5.74	
	17		E.	13.95	14.95	18.12	19.20	20.21						
	18		B.	3.30	4.17	5.10	5.97	8.83						
	19	ζ Aquilæ - - - - -	C.	26.60	27.66	28.50	29.49	30.25	59 28.53	0.18	23.25	18 59 5.09	6.60	
	20		D.	48.20	51.13	52.10	52.86	53.73						
	21		B.	15.49	16.36	17.30	18.19	20.92						
	22	η Aquarii - - - -	C.	38.22	39.15	39.94	40.90	41.74	28 40.02	0.20	23.16	22 28 16.65	6.99	
	23		D.	59.09	61.92	62.81	63.72	64.55						
	24		B.	34.07	34.93	35.70	36.62	39.55						
	25	ζ Pegasi - - - - -	C.	57.09	57.99	58.90	59.91	60.73	34 58.94	0.19	23.17	22 34 35.58	6.79	
	26		D.	18.41	21.20	22.16	23.00	23.83						
	27		B.	49.20	50.15	51.12	51.92	54.71						
	28	75 Aquarii - - - - -	C.	12.56	13.60	14.49	15.40	16.20	47 14.42	0.22	23.17	22 46 51.02	7.17	
	29		D.	33.95	36.86	37.85	38.69	39.56						
	30		B.	10.89	11.86	12.80	13.70	16.64						
	31	Lalande, 44877 - -	C.	35.33	36.20	37.17	38.20	39.10	50 37.21	0.24	23.17	22 50 13.80	7.32	
	32		D.	57.75	60.68	61.66	62.59	63.57						
	33		A.	27.85	28.70	29.50	32.31	33.19						
	34		B.	50.55	51.45	52.34	53.29	56.20						
	35	β Piscium - - - -	C.	13.52	14.40	15.28	16.24	17.09	57 15.26	0.17	23.17	22 57 51.92	6.84	
	36		D.	34.50	37.30	38.20	38.91	39.77						
	37		E.	57.30	58.26	60.91	61.74	62.60						
	38		C.	35.96	37.31	38.73	40.13	41.46						
	39	7 Andromeda - - -	D.	7.66	11.70	13.24	14.52	15.82	7 12.58	34.04	23.17	23 6 15.37	6.51	
	40		E.	42.00	43.50	47.53	48.90	50.30						
	41		B.	0.09	0.95	1.82	2.71	5.46						
	42	γ Piscium - - - -	C.	22.70	23.73	24.55	25.54	26.33	10 24.61	0.20	23.17	23 10 1.24	6.87	
	43		D.	43.81	46.50	47.41	48.30	49.26						
	44		C.	13.71	14.57	15.38	16.30	17.14						
	45	κ Piscium - - - -	D.	34.56	37.37	38.31	39.20	40.00	20 37.85	22.61	23.18	23 19 52.06	6.78	
	46		E.	57.40	58.30	60.99	61.83	62.69						
	47	ι Piscium - - - -	C.	13.37	14.30	15.15	16.09	16.90	33 15.16	0.20	23.18	23 33 51.78	— 6.73	
	48		A.	53.91	54.73	55.61	58.20	59.30						
	49		B.	17.17	18.12	18.95	19.86	22.63						
	†50	Moon's 2d Limb - -	C.	40.41	41.32	42.25	43.11	43.95	34 42.15	— 0.17	—23.18	23 34 18.79	- -	
	51		D.	1.79	4.51	5.42	6.21	7.10						
	52		E.	24.95	25.86	28.50	29.47	30.35						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h. July 25, 23.2	s. — 23.17	s. — 0.015	s. — 0.168	s. + 0.081	s. — 0.036

2. Followed by a smaller star to southward.
50. Good observation.
Azimuth, for July 25, from δ Ursæ Minoris and clock stars.
July 25. 19*h*. 5*m*. Image east 0.09 *r*. Clamp west.

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
	1		B.	50.16	50.96	51.91	52.86	55.61						
July 25	2	20 Piscium - - - -	C.	12.97	13.90	14.89	15.73	16.53	41 14.80	— 0.21	—23.18	23 40 51.40	— 6.71	Y
	3		D.	34.00	36.82	37.69	38.56	39.35						
	4		A.	21.40	22.29	23.36	26.00	26.96						
	5		B.	44.27	45.29	46.13	46.97	49.62						
	6	29 Piscium - - - -	C.	7.12	8.08	8.90	9.88	10.68	55 8.89	0.18	23.19	23 55 45.53	6.63	
	7		D.	28.09	30.79	31.73	32.65	33.49						
	8		E.	50.90	51.79	54.43	55.33	56.19						
	9		B.	59.00	59.90	60.89	61.82	64.68						
	10	Weisse, 1222 - - -	C.	21.86	22.99	23.81	24.80	25.60	0 23.84	0.20	23.19	0 0 0.46	6.59	
	11		D.	43.10	45.96	46.89	47.75	48.57						
	12	Weisse XXIII, —1269	D.	34.88	37.30	38.33	39.23	40.14	2 49.40	34.55	23.19	0 1 51.66	6.58	
	13		E.	57.89	58.80	1.60	2.47	3.33						
	14	Weisse, 4 - - - -	C.	25.91	26.92	27.83	28.76	29.69	2 39.32	11.65	23.19	0 2 4.48	6.58	
	15		D.	47.45	50.38	51.21	52.13	52.93						
	16		B.	6.45	7.40	8.25	9.20	11.91						
	17	γ Pegasi - - - - -	C.	29.77	30.67	31.60	32.51	33.45	6 31.73	0.18	23.19	0 6 8.36	6.57	
	18		D.	51.54	54.42	55.35	56.22	57.24						
	19		A.	22.41	23.30	24.21	26.79	27.85						
	20		B.	45.16	46.20	47.20	48.10	50.71						
26	21	29 Piscium - - - -	C.	8.27	9.24	10.13	10.99	11.96	55 9.95	0.15	24.27	23 54 45.53	6.65	R.
	22		D.	29.20	31.85	32.81	33.68	34.60						
	23		E.	51.93	52.90	55.50	56.39	57.29						
	24		B.	7.37	8.30	9.26	10.19	13.09						
	25	γ Pegasi - - - - -	C.	30.81	31.80	32.67	33.66	34.56	6 32.74	0.18	24.27	0 6 8.29	6.59	
	26		D.	52.60	55.32	56.27	57.20	58.10						
	27		A.	24.10	25.10	26.09	28.85	29.79						
	28		B.	47.55	48.51	49.50	50.50	53.36						
	29	Moon's 2d Limb - -	C.	11.09	12.09	12.99	13.96	14.88	20 12.90	0.15	24.26	0 19 48.49	- -	
	30		D.	32.53	35.32	36.33	37.24	38.19						
	31		E.	56.00	56.89	59.62	60.50	61.50						
	32		B.	0.10	0.97	1.93	2.86	5.51						
	33	12 Ceti - - - - -	C.	22.91	23.85	24.71	25.58	26.41	23 24.70	0.18	24.26	0 23 0.26	6.49	
	34		D.	43.81	46.52	47.54	48.43	49.32						
	35		A.	22.15	23.10	23.99	26.59	27.60						
	36		B.	45.52	46.51	47.49	48.47	51.12						
	37	B. A. C., 149 - - -	C.	8.94	9.96	10.92	11.88	12.80	29 10.77	0.15	24.26	0 28 46.36	6.52	
	38		D	30.44	33.23	34.20	35.11	35.96						
	39		E.	53.80	54.68	57.29	58.23	59.20						
	40		A.	8.29	9.21	10.20	12.69	13.77						
	41		B.	31.25	32.23	33.24	34.20	36.70						
	42	δ Piscium - - - -	C.	54.21	55.16	56.10	57.11	57.95	41 56.10	0.15	24.25	0 41 31.70	6.45	
	43		D.	15.40	18.31	19.29	20.19	21.10						
	44		E.	38.25	39.24	41.90	42.80	43.77						
	45		B.	46.80	47.72	48.66	49.50	52.20						
	46	ε Piscium - - - -	C	9.81	10.74	11.60	12.54	13.45	56 11.56	0.18	24.24	0 55 47.13	6.38	
	47		D.	30.80	33.48	34.42	35.32	36.35						
	†48	Polaris - - - - -	C.	5.00	40.00	16.00	49.00	20.00	9 14.00	- -	- -	- - - -	- -	
	49		B.	32.29	33.17	33.99	34.95	37.63						
27	†50	α Ophiuchi - - - -	C.	55.46	56.40	57.35	58.26	59.10	28 57.37	- -	- -	- - - -	- -	Y.
	51		D.	17.09	19.90	20.81	21.68	22.62						
	52		C.	36.41	37.41	38.40	39.45	40.48						
	53	B. A. C., 6016 - - -	D.	0.98	4.25	5.39	6.30	7.30	41 4.79	— 26.44	—24.71	17 40 3.64	— 8.72	
	54		E.	27.75	28.76	32.00	32.95	33.98						

48. Not very steady.
50. Steady
July 25. Night good.
26. Azimuth from Polaris and ε Piscium.
26. Image east 0. 14. Clamp west.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m.	n.	c.
h. July 26, 0. 5	s. —24. 26	s. +0. 029	s. —0. 144	s. —0. 013	s. — 0. 036

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DATE.	Number.	OBJECT.	Set	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst	Clock.	Observed R Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s	m. s.	s.	h. m. s	s.	
July 27	1	✡ (7) —31° 55′	E.	50.50	51.54	54.70	55.67	56.65	47 53.81	— 52.90	—24.72	17 46 36.20	— 8.78	Y.
	2	✡ (8) —31° 54′	C.	40.45	41.50	42.59	43.60	44.71	47 42.57	0.13	24.72	17 47 17.72	8.78	
	3	✡ (7) —31° 58′	D.	17.55	20.73	21.86	22.84	23.87	48 21.37	26.56	24.72	17 47 30.10	8.78	
	4	✡ (8) —28° 40′	C.	21.54	22.62	23.60	24.52	25.58	52 23.57	0.13	24.72	17 51 58.72	8.56	
	† 5	B. A. C., 6103	C.	56.40	57.56	58.60	59.73	60.90	55 58.64	0.13	24.72	17 55 33.79	9.14	
30	6	θ Ophiuchi	D.	20.12	23.35	24.37	25.29	26.28	14 36.22	37.23	26.07	17 14 32.93	8.08	
	7		E.	45.55	46.44	49.37	50.25	51.19						
	8		B.	33.58	34.42	35.34	36.24	39.13						
	9	α Ophiuchi	C.	56.90	57.83	58.70	59.61	60.54	28 58.71	0.21	26.07	17 28 32.42	6.35	
	10		D.	18.40	21.17	22.04	22.98	23.78						
	11		B.	31.35	32.47	33.40	34.39	37.30						
	12	μ^1 Sagittarii	C	55.76	56.74	57.72	58.70	59.60	5 57.79	0.19	26.09	18 5 31.50	8.10	
	13		D.	18.38	21.33	22.30	23.27	24.16						
	14		B	44.50	59.50	15.00	29.00	15.50						
	15	δ Ursæ Minoris	C.	9.00	25.50	38.00	55.50	8.50	17 39.43	- -	- -	- - - -	- -	
	16		D	4.00	51.00	4.50	19.00	33.00						
	17		B	46.20	47.23	48.32	49.21	52.10						
	†18	B. A. C., 6341	C.	11.15	12.15	13.19	14.08	14.97	30 13.12	0.22	26.11	18 29 46.79	6.10	
	19		D.	34.02	37.26	38.11	38.92	39.83						
	20		B.	34.81	35.70	36.64	37.62	40.41						
Aug. 1	21	α Ophiuchi	C.	58.16	59.10	59.94	60.92	61.81	29 0.00	— 0.24	27.34	17 28 32.43	6.34	
	22		D.	19.59	22.46	23.40	24.28	25.19						
	23		B.	28.50	12.50	55.50	38.50	53.00						
	†24	B. A. C., 1879, S. P.	C	45.50	29.00	14.00	57.00	41.50	51 12.87	+ 1.57	27.34	5 50 47.10	34.16	
	25		D	33.50	45.00	28.50	13.00	58.00						
	26		B.	10.16	11.18	12.16	13.10	16.31						
	27	ο Herculis	C.	35.92	37.09	37.99	39 16	40.20	2 38.17	— 0.26	27.33	18 2 10.58	5.73	
	28		D.	0.14	3.36	4.34	5.29	6.23						
	29		B.	32.64	33.61	34.62	35.60	38.48						
	30	μ^1 Sagittarii	C.	57.15	58.17	59.10	60.10	60.93	5 59.07	0.20	27.33	18 5 31.54	8.10	
	31		D.	19.59	22.60	23.59	24.51	25.39						
	32		B	13.51	14.49	15.42	16.31	19.22						
	33	A Eunomia, —23° 38′	C.	38.15	39.19	40.13	41.12	41.94	9 40.16	0.20	27.33	18 9 12.62	8.27	
	34		D.	0.95	3.97	4.99	5.99	6.96						
	35		B.	42.60	43 64	44.62	45.64	48.51						
	36	B. A. C , 6222	C.	7.43	8.41	9.39	10.42	11.30	14 9.41	0.20	27.33	18 13 41.88	— 8.25	
	37		D.	30.28	33.29	34.30	35.21	36.16						
	38	δ Ursæ Minoris	C.	11.00	26.00	40.00	56.00	10.00	17 40.60	1.89	27.33	18 17 11.38	+ 19.05	
	39		F.	21.17	22.17	23.14	24.09	26.92						
	40	B. A. C., 6293	C.	45.13	46.10	47.05	48.00	48.90	23 47.11	— 0.20	27.33	18 23 19.57	— 8.03	
	41		D.	7.40	10.26	11.23	12.17	12.94						
	42	51 (Hev.) Cephei, S. P.	C.	18.00	57.00	39.00	20.50	3.00	34 39.50	+ 1.91	27.33	6 34 14.08	35.56	
	43	* —44° 41′	C	44.32	45.59	46.72	47.96	48.99	42 46.72	— 0.17	27.33	18 42 19.21	10.16	
	44		B.	58.50	59.55	60.57	61.48	64.82						
	45	β Lyræ	C.	25.64	26.75	27.80	28.83	29.89	45 27.84	0.27	27.33	18 45 0.24	5.69	
	46		D.	50.59	53.96	55.02	56.10	57.10						
	47		B.	49.35	50.29	51.21	52.20	55.00						
	48	Rumker, 6881	C.	13.68	14.77	15.60	16.53	17.48	51 15.63	0.25	27.33	18 50 48.05	6.25	
	49		D.	36.13	39.10	40.11	41.09	41.95						
	50		B.	18.87	19.71	20.71	21.54	24.45						
	51	B. Z., 302, 3	C.	43.18	44.11	45.00	45.99	46.87	58 45.04	— 0.20	—27.33	18 58 17.51	— 8.24	
	52		D.	5.48	8.53	9.47	10.38	11.30						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s	s.	s.
July 27, 17.5	— 24.71	— 0.032	— 0.094	— 0.013	— 0.036
30, 17.6	— 26.08	— 0.032	— 0.167	— 0.035	— 0.036

5. Clouds over.
18. Through clouds.
24. Steady.

July 27. 18*h.* 10*m.* { *r.* Image east 0.09. Clamp west. / Image east 0.05. Clamp east.

30. 18*h.* 35*m.* Image east 0.18. Clamp west. Night cloudy.

Azimuth cor., for July 30, from δ Ursæ Minoris and μ^1 Sagittarii.

Hosted by Google

DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
	1		B.	42.23	43.20	44.11	45.11	47.98						
Aug 1	2	B. A. C., 6550 - - -	C.	6.41	7.38	8.29	9.21	10.13	2 8.34	— 0.20	—27.33	19 1 40.81	— 8.17	Y.
	3		D.	28.71	31.79	32.66	33.48	34.44						
	4		B.	23.81	24.77	25.63	26.67	29.39						
	5	ω Aquilæ - - - - -	C.	47.09	48.00	48.98	49.89	50.79	11 48.95	0.23	27.33	19 11 21.39	6.72	
	6		D.	8.51	11.41	12.26	13.17	13.90						
	7		B.	3.59	4.59	5.49	6.46	9.40						
	8	* (9) —19° 20′ - -	C.	27.65	28.64	29.63	30.52	31.46	17 29.61	0.20	27.33	19 17 2.08	8.16	
	9		D.	49.80	52.82	53.80	54.70	55.56						
	10		B.	23.96	24.98	25.98	26.97	29.87						
	11	* (9) —20° 42′ - -	C.	48.65	49.60	50.49	51.47	52.41	23 50.47	0.20	27.33	19 23 22.94	8.24	
	12		D.	10.99	13.96	14.98	15.95	16.79						
	13		B.	27.30	28.19	29.10	30.11	32.55						
	14	* (9) —20° 37′ - -	C.	51.52	52.58	53.47	54.42	55.36	30 53.41	0.20	27.33	19 30 25.89	8.26	
	15		D.	13.82	16.70	17.74	18.68	19.65						
	16		B	21.85	22.89	23.81	24.73	27.62						
	17	Lalande, 37507 - -	C.	46.48	47.56	48.40	49.29	50.19	38 48.38	0.20	27.33	19 38 20.85	8.31	
	18		D.	9.14	11.92	12.93	13.94	14.85						
	19		B.	24.21	25.24	26.19	27.11	30.11						
	20	Lalande, 37873 - -	C.	48.33	49.42	50.31	51.24	52.15	47 50.35	0.20	27.33	19 47 22.82	8.18	
	21		D.	10.69	13.63	14.60	15.53	16.45						
	22		B.	3.31	4.31	5.19	6 10	8.95						
	23	Lalande, 38164 - -	C.	27.49	28.42	29.39	30.21	31.20	54 29.34	0.20	27.32	19 54 1.82	— 8.17	
	24		D.	49.65	52.64	53.55	54.44	55.32						
	25	λ Ursæ Minoris - - -	C.	13.00	58.00	45.00	31.00	18.00	3 45.00	— 5.32	27.32	20 3 12.35	+ 44.98	
	26		B.	5.50	53.50	41.50	31.00	56.00						
	27	B. A. C, 2787, S. P. -	C.	13.50	1.00	50.00	38.00	27.50	14 49.87	+ 1.08	27.32	8 14 23.63	— 17.62	
	28		D.	44.00	9.00	57.00	45.50	35.00						
	29		C.	38.94	39.94	40.90	41.82	42.61						
	30	ε Aquarii - - - - -	D.	0.31	3.17	4.10	4.89	5.80	41 3.64	— 22.96	27.32	20 40 13.36	7.66	
	31		E.	23.51	24.41	27.19	28.10	28.91						
	32		B.	41.80	42.81	43.93	44.94	47.92						
	33	32 Vulpeculæ - - - -	C.	7.61	8.60	9.58	10.53	11.48	49 9.56	0.26	27.32	20 48 41.98	6.39	
	34		D.	31.28	34.29	35.26	36.26	37.10						
	35		B.	4.41	5.41	6.41	7.42	10.67						
	36	ζ Cygni - - - - -	C.	30.46	31.54	32.62	33.73	34.80	7 32.65	— 0.26	27.32	21 7 5.07	6.38	
	37		D.	54.88	57.80	58.92	59.86	60.86						
3	38	B. A. C, 1879, S. P. -	C.	48.00	30.00	15.00	58.50	45.00	51 15.30	+ 0.94	28.42	5 50 47.82	34.92	
	39		B.	24.30	25.39	26.31	27.37	30.41						
	40	B. A. C., 6132 - - -	C.	49.51	50.51	51.52	52.59	53.47	0 51.56	— 0.29	28.43	18 0 22.85	8.35	
	41		D.	12.91	15.76	16.84	17.82	18.74						
	42		C.	58.22	59.22	60.15	61.15	62.11						
	43	μ^1 Sagittarii - - - -	D.	20.76	23.67	24.68	25.59	26.46	6 24.20	24.30	28.43	18 5 31.47	8.09	
	44		E.	45.15	46.14	49.00	49.85	50.82						
	45		B.	14.21	15.21	16.21	17.26	19.95						
	†46	A Eunomia, —23° 39′ -	C.	39.23	40.21	41.25	42.16	43.12	9 41.22	0.29	28.43	18 9 12.50	8.27	
	47		D.	2.40	5.31	6.33	7.29	8.20						
	48		B.	43.88	44.95	45.94	46.88	49.75						
	49	B. A. C., 6222 - - -	C.	8.60	9.66	10.62	11.55	12.50	14 10.63	0.29	28.44	18 13 41.91	— 8.25	
	50		D.	31.49	34.48	35.49	36.43	37.27						
	51	δ Ursæ Minoris - - -	C.	10.00	25.00	40.00	55.00	10.00	17 40.00	1.40	28.44	18 17 10.16	+ 19.70	
	52		B.	24.24	25.10	26.10	26.96	29.88						
	53	b Eunomia, —22° 46′ -	C.	48.86	49.83	50.78	51.71	52.61	21 50.79	— 0.29	—28.44	18 21 22.06	— 8.26	
	54		D.	11.58	14.57	15.58	16.54	17.52						

46. Dim.
Azimuth cor., Aug. 1, from δ Ursæ Minoris and 51 (Hev.) Cephei, S. P.

Aug. 1. 20*h*. 55*m*. Image east 0. 22. Clamp west.
Azimuth cor., Aug. 3, from δ Ursæ Minoris and (51) Hev. Cephei, S. P.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m*.	*n*.	*c*.
h.	s	s.	s.	s.	s.
Aug. 1, 19.3	— 27.33	+ 0.005	— 0.186	— 0.063	— 0.036
3, 19.0	— 28.47	— 0.038	— 0.260	— 0.030	— 0.036

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DATE	Number.	OBJECT.	Set	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s	m. s.	s	h. m. s.	s.	
Aug. 3	1	Lalande, 34229	D.	16.40	19.41	20.36	21.37	22.21	25 32.05	— 36.59	—28.44	18 24 27.02	— 8.24	Y.
	2		E	41.11	42.10	44.95	45.82	46.78						
	3	51 (Hev.) Cephei, S. P.	C.	19.00	0.50	41.50	22.00	5.00	34 41.60	+ 1.14	28.45	6 34 14.29	36.35	
	4		B.	59.72	0.83	1.93	2.97	6.20						
	5	β Lyræ	C.	26.88	27.96	29.11	30.15	31.19	45 29.08	— 0.32	28.46	18 45 0.30	5.68	
	6		D.	51.90	55.26	56.28	57.38	58.39						
	7		B.	50.38	51.41	52.36	53.31	56.25						
	8	Rumker, 6881	C.	14.86	15.85	16.70	17.68	18.65	51 16.77	0.31	28.46	18 50 48.00	6.25	
	9		D.	37.29	40.24	41.30	42.21	43.10						
	10	Weisse, 1344	E.	50.33	51.13	33.95	54.84	55.70	54 53.19	46.59	28.46	18 53 38.13	7.88	
	11	✡ (8) —13° 4′	C.	6.15	7.18	8.10	8.99	9.83	0 8.05	0.29	28.47	18 59 39.29	7.81	
	12		B.	45.43	46.42	47.27	48.15	50.88						
	13	Weisse, 1547	C.	8.82	9.82	10.64	11.59	12.44	1 10.68	0.29	28.47	19 0 41.92	7.81	
	14		D.	30.36	33.21	34.17	35.10	35.93						
	15		B.	24.99	25.92	26.89	27.78	30.59						
	16	ω Aquilæ	C.	48.29	49.19	50.02	51.01	51.89	11 50.11	0.30	28.47	19 11 21.33	6.72	
	17		D.	9.65	12.49	13.43	14.33	15.21						
	18		B.	33.66	34.63	35.66	36.60	39.50						
	19	Gr C, 1719	C.	58.10	59.10	60.00	60.99	61.97	15 0.03	0.29	28.47	19 14 31.27	8.26	
	20		D.	20.60	23.48	24.48	25.41	26.32						
	21		B.	37.61	38.54	39.45	40.30	43.01						
	22	δ Aquilæ	C.	0.41	1.31	2.23	3.10	3.94	19 2.21	0.30	28.48	19 18 33.43	7.12	
	23		D.	21.37	24.13	25.10	25.94	26.78						
	24		B.	7.98	8.91	9.88	10.90	13.68						
	25	h Melpomene, —19° 53′	C.	32.20	33.10	34.00	34.99	35.91	26 34.08	0.29	28.48	19 26 5.31	8.21	
	26		D.	54.40	57.40	58.39	59.30	60.16						
	27		C.	52.50	53.45	54.40	55 30	56.25						
	†28	✡ (9. 10) —20° 37′	D.	14.90	18.10	18.94	19.80	20.71	32 18.41	24.22	28.49	19 31 25.69	8.25	
	29		E.	39.41	40.29	43.19	43.96	44.90						
	30	Radcliffe, 2020, S. P.	C.	16.00	29.00	42.00	55.00	9.00	39 42.20	1.25	28.49	7 39 12.45	12.67	
	31		B.	37.19	38.10	38.95	39.79	42.54						
	32	β Aquilæ	C.	0.10	1.09	1.89	2.71	3.66	49 1.90	0.30	28.50	19 48 33.10	7.03	
	33		D.	21.18	24.00	24.89	25.75	26.64						
	34		B.	56.19	57.30	58.37	59.33	62.35						
	35	Arg. Z., 239, 92	C	22.00	22.99	23.93	24.88	25.80	56 23.88	— 0.28	28.50	19 55 55.09	8.61	
	36		D.	45.26	48.49	49.49	50.45	51.40						
	37		B.	33.00	17.00	1.00	45.00	58.00						
6	38	B. A. C., 1879, S. P.	C.	52.00	36.00	21.00	4.00	49.00	51 19.00	+ 2.10	31.82	5 50 49.28	36.07	
	39		D.	40.00	51.00	34.00	19.00	5.00						
	40		B.	14.10	15.11	16.20	17.20	20.22						
	41	ο Herculis	C.	40.17	41.28	42.12	43.14	44.18	2 42.18	— 0.07	31.81	18 2 10.30	5.70	
	42		D.	4.10	7.22	8.23	9.22	10.19						
	43		B	36.80	37.81	38.76	39.82	42.69						
	44	μ^1 Sagittarii	C.	1.31	2.31	3.29	4.22	5.09	6 3.29	+ 0.01	31.81	18 5 31.48	— 8.08	
	45		D.	23.90	26.88	27.95	28.76	29.73						
	46		B.	49.00	4.00	19.00	34.00	19.00	17 43.40	— 1.95	31.80	18 17 9.64	+ 20.64	
	47	δ Ursæ Minoris	D.	7.00	53.00	9.00	23.00	37.00						
	48		B.	50.90	51.90	52.79	53.68	56.51						
	49	B. A. C., 6266	C.	15.49	16.50	17.38	18.27	19.12	20 17.46	+ 0.01	31.80	18 19 45.67	— 8.27	
	50		D.	38.26	41.25	42.32	43.26	44.25						
	51		B.	51.60	52.53	53.58	54.52	57.40						
	52	B. A. C., 6341	C.	16.61	17.60	18.59	19.53	20.41	30 18.50	— 0.06	—31.79	18 29 46.65	— 6.06	
	53		D.	39.49	42.45	43.49	44.43	45.26						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h. Aug. 3, 19.0	s. — 28.47	s. — 0.038	s. — 0.260	s. — 0.030	s. — 0.036

28. Dim.

Aug. 3. 20*h.* 10*m.* { r. Image east 0.27. Clamp west. Image east 0.22. Clamp east.

DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s	s.	h. m. s	s.	
Aug. 6	†1	51 (Hev.) Cephei, S. P.	C.	23.00	4.00	45.00	26.00	8.00	34 45.20	+ 2.50	—31.79	6 34 15.91	— 37.52	Y.
	2	σ Sagittarii	B.	47.81	48.74	49.71	50.75	53.51	47 2.63	12.54	31.78	18 46 43.39	8.56	
	3		C.	13.16	14.22	15.21	16.11	17.10						
	4	Lacaille, 7998	B	44.43	45.72	46.84	47.89	51.36	0 14.20	0.03	31.77	18 59 42.46	9.15	
	†5		C.	12.10	13.10	14.11	15.10	16.18						
	6		D.	37.36	40.70	41.71	42.70	43.76						
	7	Lacaille, 8028	A.	15.97	17.09	18.17	21.52	22.54	4 13.31	0.09	31.77	19 3 41.62	9.16	
	8		C.	11.38	12.39	13.33	14.29	15.21						
	9		E.	4.36	5.22	8.41	9.33	10.39						
	10	✡ (7) —34° 5′	B	44.23	45.21	46.49	47.53	50.61	4 13.99	0.03	31.77	19 3 42.24	9.16	
	11		D.	37.10	40.50	41.61	42.65	43.74						
	12	Lacaille, 8060	B.	26.04	27.11	28.22	29.32	32.19	9 41.98	13.46	31.76	19 9 23.67	9.11	
	13		C.	53.34	54.39	55.40	56.36	57.44						
	14	✡ (7) —33° 25′	B	10.46	11.55	12.57	13.48	17.00	10 39.85	0.03	31.76	19 10 8.11	9.11	
	15		C.	37.67	38.63	39.69	40.68	41.81						
	16		D.	2.99	6.39	7.37	8.25	9.25						
	17	Lacaille, 8092	B	5.10	6.13	7.09	8.21	11.55	15 34.66	+ 0.03	31.76	19 15 2.93	9.15	
	18		C.	32.45	33.79	34.72	35.72	36.79						
	19		D.	57.75	61.11	62.12	63.17	64.23						
	20	δ Aquilæ	B	40.40	41.38	42.21	43.15	46.00	19 5.15	— 0.03	31.76	19 19 33.37	7.13	
	21		C.	3.49	4.35	5.18	6.09	6.90						
	22		D.	24.43	27.08	27.97	28.91	29.78						
	23	B. A C., 6680	B.	45.59	46.47	47.55	48.59	51.84	24 14.24	+ 0.02	31.76	19 23 42.50	8.95	
	24		C.	12.10	13.20	14.31	15.31	16.25						
	25		D.	36.61	39.88	40.90	41.95	42.99						
	26	Lacaille, 8169	B	9.40	10.48	11.54	12.59	15.82	29 28.74	0.03	31.75	19 29 7.01	9.11	
	27		C.	36.67	37.70	38.72	39.82	40.80						
	28		D.	1.60	4.91	5.90	6.99	8.10						
	29	γ Aquilæ	B	49.68	50.80	51.71	52.55	55.34	40 14.55	+ 0.14	31.74	19 40 42.95	6.85	
	30		C	12.81	13.79	14.72	15.54	16.49						
	31		D.	34.10	37.00	37.96	38.85	- -						
	32	α Aquilæ	B.	10.96	11.87	12.76	13.74	16.46	45 35.84	— 0.03	31.74	19 45 4.06	6.99	
	33		C.	34.00	34.98	35.82	36.78	37.58						
	34		D.	55.19	57.95	58.91	59.88	60.70						
	35	β Aquilæ	B.	40.23	41.10	41.93	42.85	45.73	49 4.94	— 0.03	31.74	19 49 33.17	7.04	
	36		C.	3.16	4.04	4.82	5.84	6.71						
	37		D.	24.21	27.10	27.95	28.79	29.67						
	38	B. A. C., 6877	B.	38.11	39.16	40.20	41.33	44.57	56 7.26	+ 0.03	31.73	19 55 35.55	— 9.00	
	39		C.	5.18	6.28	7.30	8.28	9.34						
	40		D.	30.03	33.45	34.42	35.42	36.33						
	41	λ Ursæ Minoris	C.	10.00	58.00	40.00	32.00	10.00	3.42.00	— 6.20	31.73	20 3 4.07	+ 47.64	
	42	B. A C., 2787, S. P.	C.	19.00	7.00	56.00	44.00	32.00	14 55.60	+ 1.55	31.72	8 14 25.43	— 18.30	
	43	ρ Capricorni	B.	6 35	7.30	8.24	9.19	12.08	21 32.21	0.00	31.72	20 21 0.49	8.11	
	44		C	30.26	31.24	32.20	33.20	34.19						
	45		D.	52.22	55.21	56.17	57.19	58.06						
	46	μ Herculis	B.	19.48	20.61	21.56	22.60	26.91	41 47.43	— 0.09	43.08	17 41 4.26	— 5.49	
15	47		C.	45.32	46.36	47.41	48.26	49.30						
	48		D.	9.00	12.18	13.25	14.17	15.10						
	49	Moon's 1st Limb	A.	12.88	13.92	14.85	17.94	19.13	54 6.95	+ 0.01	—43.07	17 54 23.90	- -	
	50		B.	39.07	40.08	40.98	41.93	45.24						
	51		C.	4.94	5.90	6.90	7.90	8.89						
	52		D.	28.90	32.17	33.12	34.05	34.90						
	53		E.	54.94	55.83	58.82	59.81	60.79						

1. Unsteady.
5. Dim.

Aug. 6. 20*h*. 30*m*. Image east 0.04 *r*. Clamp west.
Azimuth cor., August 6, from δ Ursæ Minoris and 51 (Hev.) Cephei, S. P.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m*.	*n*.	*c*.
h.	s.	s.	s.	s.	s.
Aug. 6, 19.5	— 31.76	+ 0.042	+ 0.015	— 0.082	— 0.036

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
	1		A.	23.51	24.56	25.50	28.51	29.43						
	2		B.	48.27	49.19	50.05	50.99	53.84						
Aug. 15	3	μ^1 Sagittarii - - - -	C.	12 61	13.60	14.57	15.61	16.42	6 14.48	0.00	—43.06	18 5 31.42	— 8.00	Y.
	4		D.	35.00	37.99	38.93	39.89	40.80						
	5		E.	59.49	0.47	3.31	4.30	5.11						
	6		A.	58.86	59.80	60.82	64.10	65.21						
	7		B.	25.25	26.32	27.33	28.20	31.49						
	8	δ Sagittarii - - - -	C.	51.51	52.65	53.67	54.61	55.58	12 53.54	+ 0.02	43.06	18 12 10.50	8.57	
	9		D.	15.61	18.90	19.92	20.80	21.84						
	10		E.	42.00	42.94	46.00	47.10	47.96						
	11		B.	40.61	41.69	42.62	43.53	46.61						
	12	B. A. C., 6241 - - -	C.	5.53	6.54	7.39	8.37	9.30	17 7.46	— 0.09	43.05	18 16 24.31	5.91	
	13		D.	28.28	31.21	32.36	33.35	34.40						
	14		B.	43.97	45.00	45.97	46.85	49.98						
	15	λ Sagittarii - - - -	C.	9.28	10.36	11.29	12.28	13.27	20 11.22	0.02	43.05	18 19 28.14	— 8.33	
	16		D.	32.49	35.52	36.40	37.37	38.32						
	17	δ Ursæ Minoris - - -	D.	17.00	3.00	18.00	33.00	48.00	24 11.80	—6 20.89	43.05	18 17 7.85	+ 23.46	
	†18	51 (Hev.) Cephei, S. P. -	C.	39.00	19.00	1.00	41.00	24.00	35 0.80	+ 2.62	43.04	6 34 20.38	— 40.95	
20	19	51 (Hev.) Cephei, S. P. -	C	45.50	26.00	8.00	48.50	31.00	35 7.80	+ 1.93	47.79	6 34 21.94	43.20	
	20		B.	18.68	19.82	20.80	21.79	25.00						
	21	β Lyræ - - - - -	C.	45.79	46.91	47.84	48.94	50.04	45 47.98	— 0.11	47.79	18 45 0.08	5.50	
	22		D.	10.82	14.47	15.33	16.32	17.22						
	23		B.	27.48	28.35	29.34	30.29	33.00						
	24	ζ Aquilæ - - - - -	C.	51.00	51.97	52.86	53.72	54.58	59 52.81	0.09	47.79	18 59 4.93	6.49	
	25		D.	12.47	15.40	16.39	17.21	18.15						
	26		C.	26.10	27.18	28.11	29.21	30.21						
	27	✡ (6.7) +30° 58′ - -	D.	50.58	53.83	54.91	55.88	56.85	11 54.34	26.24	47.80	19 10 40.30	5.76	
	28		E.	17.17	18.19	21.35	22.21	23.27						
	29		C.	12.22	13.18	14.00	14.90	15.99						
	30	4 Vulpeculæ - - - -	D.	34.49	37.40	38.33	39.21	40.04	20 37.85	23.86	47.81	19 19 26.18	6.33	
	31		E.	58.62	59.55	62.40	63.28	64.22						
	32	9 Vulpeculæ - - - -	D.	40.41	43.33	44.41	45.28	46.13	29 55.77	35.64	47.81	19 28 32.32	6.38	
	33		E.	4.71	5.60	8.41	9.25	10.22						
	34		B.	54.61	55.80	56.92	58.38	62.17						
	35	δ Cygni - - - - -	C.	26.57	27.89	29.10	30.30	31.60	41 29.10	— 0.14	47.81	19 40 41.15	5.24	
	36		D.	56.11	59.88	61.30	62.36	63.52						
	†37	✡ (9.10) —22° 36′ - -	B.	50.17	51.27	52.28	53.39	- -	45 16.51	+ 0.37	47.82	19 44 29.07	8.36	
	†38		D.	37.58	40.66	41.71	42.70	43.59						
	39		B.	57.16	58.12	59.18	60.10	- -						
	40	✡ (9.10) —17° 29′ - -	C.	21.07	21.97	22.95	23.91	24.76	50 22.70	+ 0.31	47.82	19 49 35.19	— 8 08	
	41		D.	43.20	45.93	46.98	47.85	48.67						
	42	λ Ursæ Minoris - - -	C.	18.00	6.00	50.00	38.00	24.00	3 51.20	— 4.90	47.82	20 3 58.47	+ 56.20	
	43		B.	41.18	42.21	43.26	44.22	47.21						
	44	Arg. Z, 240, 89 - -	C.	6.28	7.22	8.29	9.24	10.27	14 8.21	0.07	47.83	20 13 20.31	— 8.45	
	45		D.	29.05	32.17	33.19	34.20	35.10						
	46		B.	51.36	52.35	53.39	54.42	57.41						
	47	B. A. C., 7032 - - -	C.	17.27	18.39	19.31	20.35	21.39	20 19.33	0.06	47.83	20 19 31.43	8.74	
	48		D.	41.25	44.20	45.28	46.28	47.30						
	49	Weisse, 664 - - -	B.	26.39	27.48	28.51	29.42	32.18	27 52.00	0.07	47.84	20 27 4.09	7.98	
	50		D.	11.87	14.71	15.55	16.46	17.41						
	51		B.	2.24	3.24	4.25	5.15	8.27						
	52	32 Vulpeculæ - - - -	C.	27.88	28.96	29.95	30 93	31.84	49 29.95	— 0.10	—47.85	20 48 42.00	— 6.46	
	53		D.	51.66	54.71	55.76	56.72	57.64						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
Aug. 15, 18.1	— 43 06	+ 0.036	+ 0.004	— 0.069	— 0.055
20, 20.8	— 47.85	— 0.027	— 0.022	— 0.037	— 0.055

18. Unsteady.
37, 38 Preceded by smaller star.
Azimuth, August 15, from δ Ursæ Minoris and 51 (Hev.) Cephei, S. P.

r.
Aug. 15. 18*h.* 50*m.* Image east 0.03. Clamp west.

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s	s	m. s.	m. s.	s.	h. m. s.	s.	
Aug. 20	1	Lacaille, 8691	C.	58.58	59.57	60.53	61.50	62.50	0 0.54	— 0.07	—47.85	20 59 12.62	— 8.61	Y.
	2	3 Picis Australis	C.	53.21	54.37	55.41	56.38	57.33	5 55.34	0.07	47.85	21 5 7.42	8.61	
	3	Lacaille, 8758	C.	55.04	56.08	57.00	58.06	58.98	9 57.03	0.07	47.85	21 9 9.11	8.78	
	4	Lacaille, 8787	C.	24.36	25.50	26.51	27.51	28.49	14 26.47	0.07	47.86	21 13 38.55	8.67	
	5	Lacaille, 8821	C.	13.80	14.90	15.87	16.81	17.75	20 15.83	— 0.07	47.86	21 19 27.90	8.57	
	6	✡ (7) —25° 56′	B.	2.88	3.84	4.90	5.92	9.05	24 5.32	+ 24.87	47.86	21 23 42.33	8.43	
	7	Lacaille, 8839	C.	39.77	40.75	41.71	42.68	43.61	24 41.70	— 0.06	47.86	21 23 53.78	8.43	
	8	7 Picis Australis	C.	18.35	19.43	20.45	21.57	22.61	29 20.48	0.06	47.86	21 28 32.55	8.83	
	9		B.	48.68	49.55	50.48	51.35	54.28						
	10	ε Pegasi	C.	11.81	12.88	13.70	14.53	15.41	38 13.63	0.08	47.87	21 37 25.68	7.17	
	11		D.	33.05	35.70	36.74	37.72	38.56						
	12	Lacaille, 8934	C.	43.29	44.39	45.45	46.42	47.38	42 45.39	0.07	47.87	21 41 57.45	8.45	
	13	Lacaille, 8965	C.	39.72	40.81	41.81	42.85	43.82	48 41.80	0.07	47.87	21 47 54.86	8.58	
	14	Lacaille, 8981	C.	20.83	21.80	22.74	23.75	24.81	52 22.79	0.07	47.87	21 51 34.85	8.49	
	15		A.	59.13	60.07	60.98	63.81	64.82						
	16		B.	22.80	23.71	24.69	25.60	28.28						
	17	ι Aquarii	C.	46.36	47.27	48.14	49.11	49.98	59 48.15	0.04	47.88	21 59 0.24	7.83	
	18		D.	7.95	10.90	11.79	12.62	13.49						
	19		E.	31.58	32.42	35.26	36.12	36.97						
	20	B. A. C., 7729	C.	25.10	26.10	27.12	28.17	29.19	4 27.14	0.07	47.88	22 3 39.19	8.33	
	21		A.	34.35	35.25	36.13	38.73	39.81						
	22		B.	57.34	58.22	59.24	60.11	62.91						
	23	θ Aquarii	C.	20.48	21.42	22.38	23.23	24.11	10 22.23	0.04	47.88	22 9 34.31	7.63	
	24		D.	41.61	44.38	45.36	46.16	46.99						
	25		E.	4.65	5.58	8.29	9.11	9.93						
	26		B.	20.32	21.33	22.36	23.28	26.11						
	27	ρ Aquarii	C.	43.46	44.41	45.36	46.28	47.20	13 45.37	0.07	47.88	22 12 57.42	7.61	
	28		D.	4.74	7.65	8.51	9.33	10.24						
	29	Lacaille, 9144	C.	28.17	29.12	30.10	31.11	32.10	22 30.12	0.07	47.89	22 21 42.17	8.28	
	30		A.	55.10	56.10	57.10	59.87	60.85						
	31		B	18.62	19.60	20.51	21.38	24.20						
	32	Moon's 2d Limb	C.	42.11	42.98	43.90	44.85	45.70	29 43.84	0.04	47.89	22 28 55.91	- -	
	33		D.	3.48	6.43	7.41	8.29	9.12						
	34		E.	26.92	27.75	30.43	31.30	32.13						
	35		C.	23.91	24.84	25.70	26.58	27.48						
	36	κ Aquarii	D.	44.90	47.78	48.68	49.57	50.40	31 48.22	22.56	47.89	22 30 37.77	7.48	
	37		E.	7.91	8.72	11.41	12.30	13.13						
	38		B.	58.98	59.89	60.86	61.81	64.49						
	39	ζ Pegasi	C.	22.07	22.93	23.83	24.70	25.61	35 23.92	0.08	47.89	22 34 35.95	7.21	
	40		D.	43.40	46.28	47.15	48.00	48.87						
	41	Lacaille, 9246	C.	10.22	11.39	12.46	13.54	14.65	40 12.45	0.07	47.90	22 39 24.49	8.32	
	42		A.	26.00	27.05	27.96	30.53	31.65						
	43		B.	49.22	50.11	51.06	51.90	54.80						
	44	λ Aquarii	C.	12.22	13.11	14.07	15.00	15.84	46 14.02	— 0.04	—47.90	22 45 26.08	— 7.52	
	45		D.	33.28	36.25	37.19	38.08	38.90						
	46		E.	56.40	57.28	59.98	60.85	61.78						
	47		A.	55.42	56.36	57.26	59.91	1.10						
21	†48	α Pegasi	B.	18.98	19.90	20.92	21.78	24.63	58 38.60	- -	- -	- - - -	- -	
	49		C.	42.63	43.51	44.45	45.28	46.19						
	50		E	27.79	28.75	31.46	32.36	33.29						
	51		A.	4.30	5.20	6.16	8.92	9.91						
	†52	γ Piscium	B.	27.19	28.10	28.98	29.90	32.61	10 29.37	- -	- -	- - - -	- -	
	53		C.	50.18	51.00	51.85	52.73	53.51						

48, 52. Through clouds.
Azimuth, August 20 and 21, from 51 (Hev.) Cephei, S. P., and λ Ursæ Minoris, of 20th.

August 20. Image east 0.03 r. Clamp west.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m.	n.	c.
h.	s.	s	s.	s.	s.
Aug. 20, 20.8	— 47.85	— 0.027	— 0.022	— 0.037	— 0.055
21, 23.1	— 49.88	— 0.068	— 0.022	— 0.037	— 0.055

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
	1		A.	35.20	36.13	37.19	39.89	40.87						
	2		B.	58.68	59.60	0.55	1.39	4.19						
Aug. 21	†3	Moon's 2d Limb - -	C.	21.79	22.79	23.68	24.59	25.43	16 23.67	— 0.05	—49.90	23 15 33.73	- -	Y.
	4		D.	43.38	46.10	46.94	47.87	48.75						
	5		E.	6.50	7.39	10.17	10.92	11.88						
	6		B.	11.41	12.30	13.18	14.11	16.73						
23	7	α Aquarii - - - -	C.	34.05	34.98	35.89	36.80	37.69	59 35.94	+ 0.07	53.11	21 58 42.89	— 7.44	
	8		D.	55.14	57.80	58.78	59.69	60.49						
	9		B.	45.51	46.51	47.43	48.32	51.10	28 58.96	11.28	53.15	22 28 17.09	7.43	
	10	η Aquarii - - - -	C.	8.45	9.23	10.16	11.10	11.85						
	11		B.	4.08	4.92	5.91	6.81	9.70						
	12	ζ Pegasi - - - - -	C.	27.30	28.14	28.95	29.88	30.78	35 29.05	+ 0.05	53.16	22 34 35.94	7.22	
	13		D	48.51	51.28	52.28	53.18	54.00						
	14		B.	38.94	40.30	41.55	42.81	46.59						
	15	B. A. C, 7950 - - -	C.	11.35	12.65	13.95	15.40	16.58	41 14.02	— 0.05	53.16	22 40 20.81	6.89	
	16		D.	41.29	45.29	46.71	47.92	48.91						
	17		B.	22.18	23.18	24.14	24.97	27.83						
	18	α Pegasi - - - - -	C.	45.80	46.69	47.60	48.48	49.29	58 47.62	+ 0.04	53.18	22 58 54.49	7.18	
	19		D.	7.50	10.39	11.23	12.10	12.94						
	20		B.	31.97	33.19	34.40	35.77	40.29						
	21	7 Andromeda - - -	C.	6.21	7.45	8.83	10.36	11.72	7 9.05	— 0.06	53.19	23 6 15.80	7.13	
	22		D.	37.96	42.43	43.88	45.10	46.18						
	23		B.	13.11	14.11	15.09	15.96	18.68						
	24	ψ² Aquarii - - - - -	C.	36.26	37.29	38.18	39.09	39.97	11 38.12	+ 0.08	53.20	23 10 45.01	7.50	
	25		D.	57.49	0.29	1.21	2.09	2.94						
	26		B.	57.19	58.28	59.29	0.20	3.08						
	27	υ Pegasi - - - - -	C.	21.96	22.97	23.92	24.96	25.83	19 23.93	0.03	53.21	23 18 30.76	7.20	
	28		D.	44.70	47.71	48.75	49.60	50.58						
	29		B.	55.53	56.51	57.42	58.46	1.51						
	30	B. A. C., 8194 - - -	C.	20.19	21.23	22.13	23.18	24.13	25 22.09	+ 0.11	53.21	23 24 28.98	7.65	
	31		D.	42.75	45.52	46.58	47.59	48.62						
	32		B.	43.96	45.15	46.39	47.48	51.22						
	33	ι Andromeda - - -	C.	14.59	15.80	16.97	18.55	19.58	32 17.22	— 0.03	53.22	23 31 23.96	7.29	
	34		D.	43.26	46.98	48.24	49.51	50.57						
	35		D.	13.74	16.51	17.51	18.38	19.21	36 28.17	33.54	53.23	23 35 1.40	7.27	
	36	λ Piscium - - - -	E.	36.41	37.33	39.98	40.86	41.76						
	37		B.	28.22	30.11	31.70	33.40	38.68						
	38	τ Cassiopea - - - -	C.	11.34	12.96	14.62	16.48	17.75	41 14.63	0.12	53.23	23 40 21.27	7.70	
	39		D.	50.88	55.97	57.56	59.07	0.65						
	40		B.	29.00	43.00	55.00	7.00	46.00						
	41	B. A. C., 8336 - - -	C.	51.00	4.00	15.00	28.00	40.00	54 16.27	— 1.93	53.24	23 53 21.09	18.62	
	42		D	47.00	26.00	39.00	51.00	3.00						
	43		B.	36.78	37.75	38.62	39.62	42.33						
	44	γ Pegasi - - - - -	C.	0.28	1.14	2.13	2.93	3.90	7 2.16	+ 0.04	53.26	0 7 8.94	7.23	
	45		D.	21.94	24.90	25.78	26.69	27.60						
	46		A.	35.95	37.10	38.06	40.80	41.79						
	47		B.	59.21	0.13	1.09	1.94	4.92						
	48	d Piscium - - - -	C.	22.35	23.29	24.20	25.11	25.96	14 24.04	0.09	53.27	0 13 30.86	7.20	
	49		D.	43.31	46.20	47.08	47.91	48.78						
	50		E.	6.20	7.18	9.90	10.79	11.65						
	51		A.	41.39	42.42	43.38	46.10	47.10						
	52		B.	4.53	5.43	6.35	7.19	10.00						
	53	45 Piscium - - - -	C.	27.40	28.39	29.28	30.16	31.10	19 29.34	+ 0.09	—53.27	0 18 36.15	— 7.19	
	54		D.	48.77	51.51	52.43	53.36	54.19						
	55		E.	11.68	12.56	15.32	16.25	17.13						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m.	n.	c.
h.	s.	s.	s.	s.	s.
Aug. 23, 23.7	— 53.23	— 0.068	+ 0.125	— 0.091	— 0.055

3. Through clouds.
August 23 and 24. Azimuth cor. from Polaris of 23d and 24th.

Hosted by Google

DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s	m. s.	s.	h. m. s.	s.	
	1		B.	13.15	15.45	17.29	19.11	25.24						
Aug. 23	2	κ Cassiopea - - - -	C.	2.50	4.49	6.00	8.09	9.81	26 6.11	— 0.26	—53.28	0 25 12.57	— 8.59	Y.
	3		D	47.11	52.99	54.89	56.95	58.66						
	4		B.	29.09	29.99	31.05	32.10	35.10						
	5	ζ Andromeda - - -	C.	53.89	54.98	55.91	56.91	57.83	40 55.92	+ 0.03	53.30	0 40 2.64	7.32	
	6		D.	16.94	19.78	20.79	21.73	22.65						
	7		A.	21.60	22.58	23.44	26.12	27.13						
	8		B.	45.32	46.18	47.17	47.97	50.88						
	9	Moon's 2d Limb - -	C.	8.68	9.71	10.63	11.56	12.47	48 10.63	0.08	53.31	0 47 17.40	- -	
	10		D.	30.60	33.27	34.20	35.18	35.99						
	11		E.	54.10	54.99	57.79	58.60	59.49						
	12		A.	53.13	54.15	55.07	57.65	58.69						
	13		B.	16.34	17.26	18.28	19.12	21.77						
	14	ε Piscium - - - -	C.	39.10	40.19	41.00	41.93	42.86	56 41.05	+ 0.09	53.32	0 55 47.83	7.10	
	15		D.	0.42	3.31	4.17	4.97	5.81						
	16		E.	23.30	24.20	27.10	27.88	28.62						
	17	Polaris - - - - -	C.	57.00	33.00	7.00	44.00	18.00	10 7.80	— 5.80	53.33	1 9 8.66	66.06	
	18		B.	36.71	37.61	38.49	39.48	42.25						
	19	θ^1 Ceti - - - - -	C.	59.94	0.81	1.69	2.51	3.39	18 1.67	+ 0.08	53.34	1 17 8.41	6.84	
	20		D.	21.14	23.90	24.85	25.69	26.56						
	21		B.	34.82	35.78	36.64	37.59	40.40						
	22	η Piscium - - - -	C.	58.19	59.20	0.19	1.14	1.99	25 0.22	+ 0.04	53.35	1 24 6.91	7.17	
	23		D.	19.99	22.95	23.91	24.79	25.69						
	24		B.	34.15	35.10	36.10	36.93	39.79						
24	25	ζ Aquilæ - - - - -	C.	57.59	58.68	59.49	60.35	61.28	59 59.49	— 0.04	54.60	18 59 4.85	6.42	
	26		D.	19.18	21.99	23.10	23.91	24.75						
	27		B.	5.92	7.09	8.19	9.24	12.41						
	28	✲ (7) +31° 0′ - - -	C.	32.77	33.88	34.81	35.91	36.99	11 34.78	0.08	54.60	19 10 40.11	5.69	
	29		D.	57.13	0.30	1.32	2.43	3.35						
	30		B.	40.00	40.88	41.81	42.89	45.68						
	31	B. A. C., 6642 - - -	C.	3.86	4.70	5.68	6.68	7.65	19 5.71	0.04	54.59	19 18 11.07	6.38	
	32		D.	25.65	28.64	29.66	30.43	31.40						
	33	B. A. C., 6647 - - -	D.	48.29	51.43	52.38	53.43	54.39	20 3.69	35.13	54.59	19 18 33.97	6.39	
	34		E.	12.47	13.38	16.23	17.00	17.95						
	35		B.	12.41	13.49	14.29	15.24	17.92						
	36	γ Aquilæ - - - - -	C.	35.69	36.63	37.53	38.41	39.28	40 37.48	— 0.03	54.58	19 39 42.87	6.76	
	37		D.	56.91	59.70	0.71	1.52	2.49						
	38		B.	22.34	23.32	24.36	25.31	28.38						
	39	B. A. C., 6786 - - -	C.	47.90	48.92	49.89	50.93	51.93	42 49.88	+ 0.03	54.58	19 41 55.32	— 8.59	
	40		D.	11.24	14.41	15.38	16.41	17.46						
	41	λ Ursæ Minoris - - -	C.	20.00	8.00	54.00	43.00	24.00	3 53.80	— 7.65	54.57	20 2 51.57	+ 58.89	
	42		B.	55.23	56.39	57.29	58.21	1.10						
	43	σ Capricorni - - - -	C.	19.52	20.57	21.41	22.31	23.18	12 21.43	0.01	54.57	20 11 26.85	— 8.17	
	44		D.	41.83	44.75	45.71	46.59	47.42						
	45		C.	24.41	25.41	26.38	27.34	28.23						
	46	Arg. Z., 240, 98 - -	D.	47.29	50.20	51.17	52.12	52.98	22 50.77	— 24.37	54.57	20 21 31.83	8.37	
	47		E.	12.17	13.10	15.99	16.91	17.91						
	48		B.	27.70	28.64	29.67	30.63	33.64						
	49	B. A. C., 7128 - - -	C.	52.75	53.75	54.65	55.59	56.52	32 54.69	+ 0.02	54.56	20 32 0.15	8.43	
	50		D.	15.71	18.86	19.89	20.78	21.59						
	51		B.	8.79	9.90	10.98	11.93	15.10						
	52	32 Vulpeculæ - - - -	C.	34.69	35.61	36.61	37.63	38.56	49 36.61	— 0.07	—54.55	20 48 41.99	— 6.43	
	53		D.	58.14	1.31	2.34	3.29	4.35						

August 23. Image west $\overset{r.}{0.08}$. Clamp west. Stars not very steady.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
Aug. 24, 20.1	— 54.57	+ 0.025	+ 0.041	— 0.091	— 0.055
1.5	— 54.79	— 0.065	- -	- -	- -

Hosted by Google

DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s	m. s.	s.	h. m. s.	s.	
Aug. 24	1	δ Microscopium	C.	34.58	35.79	36.80	37.88	38.98	58 36.81	+ 0.03	—54.55	20 57 42.28	— 8.78	Y.
	2		B.	31.51	32.59	33.68	34.65	37.74						
	3	ζ Cygni	C.	57.52	58.60	59.59	0.70	1.70	7 59.79	— 0.07	54.55	21 7 5.17	6.46	
	4		D.	21.71	25.14	26.26	27.28	28.20						
	5	B. A. C., 240	C.	19.00	50.00	20.00	51.00	21.00	48 20.20	— 4.88	54.74	0 47 20.58	51.30	
	6		A.	54.82	55.76	56.60	59.29	0.31						
	7		B.	17.90	18.84	19.63	20.52	23.40						
	8	ε Piscium	C.	40.81	41.77	42.65	43.61	44.50	56 42.63	+ 0.01	54.75	0 55 47.89	7.13	
	9		D.	1.89	4.81	5.71	6.58	7.46						
	10		E.	24.91	25.86	28.56	29.31	30.28						
	11	Polaris	C.	58.00	35.00	8.00	47.00	22.00	10 10.01	— 5.89	54.76	1 9 9.35	66.78	
	12		A.	12.71	13.64	14.51	17.45	18.40						
	13		B.	36.37	37.33	38.21	39.12	42.07						
	14	η Piscium	C.	59.73	0.94	1.84	2.69	3.51	25 1.73	0.01	54.78	1 24 6.94	7.19	
	15		D.	21.52	24.34	25.21	26.14	26.92						
	16		E.	45.18	46.11	48.88	49.75	50.69						
	17		B.	17.66	18.59	19.65	20.48	23.21						
	18	π Piscium	C.	40.89	41.85	42.72	43.59	44.43	30 42.74	0.03	54.78	1 29 47.92	7.10	
	19		D.	2.23	5.14	6.05	6.91	7.69						
	20		A.	11.62	12.51	13.51	16.31	17.35						
	21		B.	35.69	36.58	37.54	38.53	41.40						
	22	Moon's 2d Limb	C.	59.69	0.69	1.68	2.66	3.49	35 1.60	0.01	54.79	1 34 6.81	- -	
	23		D.	21.91	24.78	25.72	26.59	27.47						
	24		E.	45.90	46.81	49.68	50.53	51.49						
	25		A.	6.32	7.32	8.21	11.13	12.25						
	26		B.	30.59	31.64	32.51	33.48	36.48						
	27	β Arietis	C.	54.94	55.90	56.80	57.79	58.66	47 56.83	0.02	54.80	1 47 2.01	7.28	
	28		D.	17.28	20.40	21.28	22.07	22.92						
	29		E.	41.55	42.57	45.27	46.22	47.19						
	30		C.	42.62	43.63	44.50	45.48	46.35						
	31	ι Arietis	D.	4.61	7.41	8.39	9.28	10.19	51 7.94	23.49	54.81	1 49 49.64	7.21	
	32		E.	28.33	29.32	32.15	32.98	33.87						
	33		A.	27.94	28.93	29.91	32.82	33.91						
	34		B.	52.79	53.83	54.81	55.75	58.75						
	35	α Arietis	C.	17.53	18.57	19.57	20.52	21.42	0 19.46	— 0.02	54.82	1 59 24.62	7.36	
	36		D.	40.33	43.34	44.26	45.19	46.12						
	37		E.	5.15	6.00	8.78	9.71	10.61						
	38		B.	47.00	25.00	1.00	35.00	25.00						
25	39	Polaris	C.	3.00	41.00	14.00	52.00	26.00	10 14.80	- -	- -	- - - -	- -	
	40		D.	2.00	53.00	30.00	6.00	42.00						
	41	θ1 Ceti	B.	40.26	41.17	42.04	42.95	45.63	18 5.04	+ 0.18	56.74	1 17 8.49	6.87	
	42		D.	24.33	27.19	28.09	28.90	29.88						
	43		B.	47.78	48.66	49.58	50.57	53.22						
	44	ν Piscium	C.	10.59	11.52	12.32	13.32	14.20	35 12.44	+ 0.15	56.75	1 34 15.84	6.99	
	45		D.	31.71	34.39	35.39	36.29	37.11						
	46		B.	21.25	22.91	24.36	25.70	30.34						
	47	B. A. C., 562	C.	57.38	58.84	0.20	1.70	3.16	45 0.28	— 0.04	56.76	1 44 3.47	8.57	
	48		D.	30.61	34.83	36.25	37.55	39.10						
	49		A.	8.04	9.09	10.10	12.98	13.89						
	50		B.	32.35	33.39	34.37	35.27	38.10						
	51	β Arietis	C.	56.69	57.65	58.53	59.48	0.43	47 58.55	+ 0.14	—56.77	1 47 1.93	— 7.31	
	52		D.	19.89	21.92	22.84	23.79	24.60						
	53		E.	43.23	44.25	47.10	47.98	48.83						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
Aug. 24. 1.5	— 54.79	— 0.065	+ 0.041	— 0.091	— 0.055

r.
Aug. 24. Image 0.00. Clamp west.

Hosted by Google

DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m s.	s.	
	1		A.	29.83	30.89	31.71	34.62	35.82						
	2		B.	54.29	55.59	56.52	57.50	0.39						
Aug. 25	† 3	α Arietis	C.	19.35	20.35	21.31	22.19	23.09	0 21.22	+ 0.13	—56.78	1 59 24.57	— 7.39	Y.
	4		D.	41.83	44.90	45.85	46.92	48.06						
	5		E.	6.98	7.83	10.51	11.57	12.57						
	6		B.	27.51	29.62	31.20	32.88	37.58						
	7	✲ (8) +56° 45′	C.	9.21	10.74	12.54	14.21	15.66	14 12.61	— 0.10	56.79	2 13 15.72	9.28	
	8		D.	47.43	52.59	54.40	56.10	57.48						
	9		A.	38.42	39.35	40.18	42.98	43.99						
	10		B.	3.06	3.90	4.92	5.86	8.57						
	11	Moon's 2d Limb	C.	27.42	28.38	29.35	30.34	31.24	23 29.33	+ 0.15	56.80	2 22 32.68	- -	
	12		D.	50.00	52.88	53.89	54.78	55.70						
	13		E.	14.77	15.58	18.39	19.23	20.11						
	14		B.	41.58	42.55	43.43	44.40	47.18						
	15	γ Ceti	C.	4.33	5.31	6.27	7.18	8.12	37 6.27	0.16	56.81	2 36 9.61	6.68	
	16		D.	25.39	28.23	29.13	30.00	30.91						
	17		A.	56.09	56.98	58.06	0.92	2.10						
	18		B.	21.62	22.61	23.67	24.70	27.67						
	19	41 Arietis	C.	47.14	48.19	49.25	50.19	51.11	42 49.12	0.12	56.82	2 41 52.42	7.47	
	20		D.	10.63	13.77	14.86	15.77	16.61						
	21		E.	36.27	37.16	39.95	40.94	41.87						
	22		A.	25.88	26.73	27.69	30.71	31.70						
	23		B.	50.41	51.36	52.30	53.20	56.20						
	24	ε Arietis	C.	14.77	15.73	16.65	17.51	18.54	52 16.60	0.14	56.83	2 51 19.91	7.22	
	25		D.	37.12	40.17	41.11	41.93	42.83						
	26		E.	1.51	2.40	5.23	6.18	7.17						
	27		B.	36.50	37.45	38.37	39.20	41.90						
	28	α Ceti	C.	59.24	0.28	1.15	2.11	2.97	56 1.12	+ 0.15	56.83	2 55 4.44	6.63	
	29		D.	20.19	23.10	23.98	24.87	25.77						
	30		B.	40.57	41.56	42.50	43.46	46.37						
Sept. 2	31	μ^1 Sagittarii	C.	4.92	5.96	6.89	7.81	8.76	6 6.91	— 0.20	35.56	18 5 31.14	7.77	
	32		D.	27.48	30.37	31.40	32.39	33.21						
	33		C.	34.95	36.20	37.19	38.21	39.22						
	34	ε Sagittarii	D.	0.42	3.73	4.93	5.90	6.91	16 4.31	— 27.39	35.57	18 15 1.36	— 8.71	
	35		E.	27.98	29.05	32.30	33.35	34.39						
	36	δ Ursæ Minoris	B.	39.50	55.50	11.00	25.50	11.00	17 35.35	+ 0.02	35.57	18 16 59.81	+ 30.23	
	37		D.	59.00	45.00	1.00	16.00	30.00						
	38		C.	48.07	49.70	50.91	52.40	53.78						
	39	B. A. C., 6258	D.	21.58	26.11	27.49	28.75	30.30	19 26.39	— 35.91	35.57	18 18 15.91	— 3.72	
	40		E.	58.06	59.31	3.77	5.11	6.51						
	41	51 (Hev.) Cephei, S. P.	C.	40.00	21.00	3.00	45.00	27.00	35 3.20	0.24	35.58	6 34 27.39	49.25	
	42		B.	37.15	38.50	40.90	41.21	45.32						
	43	B. A. C., 6428	C.	11.58	13.06	14.41	15.78	17.08	45 14.33	0.13	35.58	18 44 38.62	4.19	
	44		D.	43.21	47.47	48.93	50.31	51.59						
	45		B.	15.09	16.11	17.13	17.89	20.81						
	46	ζ Aquilæ	C.	38.64	39.63	40.42	41.34	42.25	59 40.49	0.16	35.59	18 59 4.74	6.33	
	47		D.	0.18	3.10	4.07	4.93	5.79						
	48		B.	31.91	32.80	33.81	34.81	37.81						
	49	B. A. C., 6565	C.	57.43	58.47	59.41	0.30	1.33	5 59.43	0.21	35.59	19 5 23.62	8.43	
	50		D.	20.86	24.15	25.18	26.11	27.06						
	51		B.	54.73	56.07	57.39	58.70	2.55						
	52	B. A. C., 6606	C.	27.75	29.26	30.80	32.07	33.15	13 30.59	— 0.13	—35.59	19 12 54.87	— 4.60	
	53		D.	58.51	2.53	3.90	5.16	6.31						

3. Stars unsteady.
Azimuth cor., Aug. 25, from Polaris and β^1 Ceti.

Aug. 25. 3h. 0m. Image west 0.08 (r.). Clamp west.
Azimuth cor., Sept. 2., from δ Ursæ Minoris and 51 (Hev.) Cephei, S. P.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m.	n.	c.
h.	s.	s.	s.	s.	s.
Aug. 25, 2.0	—56.78	— 0.060	+ 0.218	— 0.144	— 0.055
Sept. 2, 19.4	—35.60	— 0.027	— 0.119	+ 0.063	— 0.055

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
	1		B.	35.79	36.91	37.76	38.67	41.48						
Sept. 2	2	4 Vulpeculæ - - - -	C.	59.82	0.80	1.80	2.70	3.61	20 1.83	— 0.15	—35.60	19 19 26.07	— 6.18	Y.
	3		D.	22.19	25.09	26.05	26.91	27.82						
	4		B.	41.71	42.77	43.65	44.53	47.57						
	5	9 Vulpeculæ - - - -	C.	5.82	6.90	7.81	8.79	9.60	29 7.81	0.15	35.60	19 28 32.05	6.23	
	6		D.	28.14	31.05	32.06	32.93	33.81						
	7		B.	42.09	43.26	44.57	45.88	49.69						
	8	δ Cygni - - - - -	C	14.00	15.43	16.74	17.91	19.11	41 16.64	0.13	35.61	19 40 40.90	5.02	
	9		D.	43.57	47.49	48.78	49.90	51.20						
	10		C.	37.81	38.76	39.71	40.60	41.48						
	11	α Aquilæ - - - - -	D.	59.07	1.86	2.85	3.68	4.49	45 2.33	22.82	35.61	19 44 3.90	6.84	
	12		E.	22.10	22.96	25.62	26.55	27.43						
	13		B.	43.93	45.00	45.91	46.86	49.48						
	14	β Aquilæ - - - - -	C.	6.90	7.86	8.75	9.66	10.47	49 8.75	— 0.17	35.61	19 48 32.97	6.91	
	15		D.	27.93	30.71	31.74	32.56	33.45						
	16	α^1 Capricorni - - - -	B.	11.22	12.31	13.26	14.14	16.97	10 13.58	+ 22.82	35.62	20 10 0.78	7.80	
	17		B.	35.38	36.29	37.17	38.10	40.87						
	18	α^2 Capricorni - - - -	C.	58.73	59.74	0.55	1.47	2.39	11 0.59	— 0.19	35.62	20 10 24.78	7.81	
	19		D.	20.28	23.12	24.08	24.95	25.80						
	20		B.	32.79	33.71	34.68	35.59	38.33						
3	21	ω Aquilæ - - - - -	C.	56.08	56.99	57.86	58.83	59.69	11 57.90	0.15	36.65	19 11 21.09	6.49	
	22		D.	17.45	20.31	21.21	22.09	22.87						
	23	Lacaille, 8090 - - -	C.	19.62	20.73	21.80	22.83	23.95	15 21.79	0.22	36.66	19 14 44.91	9.04	
	24	B. A. C., 6639 - - -	C.	48.77	49.76	50.86	51.87	52.82	18 50.82	0.21	36.66	19 18 13.95	8.65	
	25	Lacaille, 8120 - - -	C.	56.99	58.09	59.15	0.29	1.30	21 59.16	0.22	36.66	19 21 22.29	8.83	
	26	B. A. C., 6684 - - -	C	54.11	55.20	56.15	57.15	58.16	24 56.15	0.21	36.66	19 24 19.28	8.72	
	27		D.	7.82	10.76	11.92	12.74	13.65						
	28	B. A. C., 6694 - - -	E.	32.78	33.75	36.73	37.62	38.53	27 28.63	37.03	36.66	19 26 14.93	8.28	
	29	B. A. C., 6755 - - -	C.	48.40	49.52	50.56	51.63	52.63	37 50.55	0.22	36.67	19 37 13.66	8.86	
	30		C.	18.21	19.38	20.41	21.55	22.67						
	31	B. A. C., 6777 - - -	D.	43.61	47.12	48.28	49.23	50.13	41 47.66	27.37	36.67	19 40 43.61	5.62	
	32		E.	11.41	12.48	15.73	16.83	17.81						
	33		B.	45.19	46.08	46.99	47.86	50.56						
	34	β Aquilæ - - - - -	C.	8.03	8.95	9.78	10.71	11.58	49 9.85	0.16	36.68	19 48 33.02	6.89	
	35		D.	29.13	31.90	32.83	33.70	34.53						
	36	B. A. C., 6854 - - -	C.	39.25	40.36	41.38	42.46	43.40	52 41.37	0.21	36.68	19 52 4.48	8.66	
	37	B. A. C., 6877 - - -	C.	10.36	11.35	12.29	13.40	14.41	56 12.36	0.22	36.69	19 55 35.46	8.84	
	38	B. A. C., 6899 - - -	C.	24.50	25.59	26.63	27.67	28.61	59 26.60	0.21	36.69	19 58 49.70	8.74	
	39	Lacaille, 8365 - - -	C.	46.06	47.10	48.00	49.16	50.11	2 48.09	0.22	36.69	20 2 11.18	8.92	
	40	B. A. C., 6947 - - -	C.	16.58	17.68	18.70	19.70	20.62	7 18.66	0.20	36.69	20 6 41.76	8.73	
	41		B.	32.68	33.76	34.74	35.71	38.68						
6	42	h^2 Sagittarii - - - -	C.	57.80	58.86	59.75	0.88	1.66	28 59.82	0.20	40.39	19 28 19.24	8.32	
	43		D.	20.88	23.98	25.07	25.98	26.90						
	44	B. A. C., 6753 - - -	C.	19.07	20.14	21.11	22.21	23.20	37 21.15	0.21	40.39	19 36 40.55	8.73	
	†45	✱ (9. 10) —22° 33′ -	C.	7.32	8.30	9.23	10.15	11.18	45 21.46	— 12.33	40.39	19 44 28.74	8.20	
	†46		D.	30.11	33.23	34.15	35.07	35.83						
	47	λ Ursæ Minoris - - -	C.	47.00	41.00	25.00	11.00	57.00	3 24.20	- -	- -	- - - -	- -	
	48		A.	52.60	53.55	54.45	57.17	58.20						
	49	α^1 Capricorni - - - -	B.	16.18	16.96	17.90	18.87	21.61	10 6.75	+ 34.39	40.38	20 10 0.75	7.75	
	50		B	39.94	40.86	41.77	42.59	45.36						
	51	α^2 Capricorni - - - -	C.	3.31	4.41	5.39	6.29	7.16	11 5.25	— 0.18	—40.38	20 10 24.69	— 7.76	
	52		D.	24.97	27.79	28.80	29.67	30.50						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
Sept. 2, 19.4	— 35.60	— 0.027	— 0.119	+ 0.063	— 0.055
3, 19.3	— 36.66	— 0.044	— 0.109	+ 0.065	— 0.055

45–46. Preceded by a star of (10) mag.

	r.	
Sept. 2. 20*h.* 20*m.*	Image east 0. 04.	Clamp west.
	Image east 0. 03.	Clamp east.
Sept. 3. 19*h.* 00*m.*	Image east 0. 03.	Clamp east.
	Image east 0. 02.	Clamp west.

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Date.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
Sept. 6	1	B. A. C. 2787, S. P.	C.	33.00	21.00	10.00	- -	- -	15 21.33	— 11.68	—40.38	8 14 29.27	— 24.38	Y.
	2		B.	14.74	15.79	16.70	17.60	20.59						
	3	ρ Capricorni	C.	38.82	39.80	40.73	41.60	42.50	21 40.72	0.18	40.38	20 21 0.15	8.03	
	4		D.	0.93	3.91	4.82	5.65	6.57						
	5	Lacaille, 8492	C.	55.89	56.92	58.00	59.18	0.15	26 58.03	0.21	40.38	20 26 17.43	8.77	
	6		B.	13.48	14.46	15.41	16.37	19.38						
	7	B. A. C., 7128	C	38.41	39.39	40.35	41.32	42.30	32 40.40	0.19	40.38	20 31 59.82	8.36	
	8		D.	1.44	4.48	5.45	6.38	7.35						
	9	Lacaille, 8546	C.	36.22	37.13	38.05	39.09	40.08	37 38.11	0.21	40.38	20 36 57.52	8.76	
	10	Lacaille, 8574	C.	31.17	32.27	33.20	34.21	35.25	41 33.22	0.21	40.38	20 40 52.63	8.69	
	11		B.	49.26	50.26	51.28	52.21	55.22						
	12	B. A. C., 7252	C.	14.80	15.78	16.75	17.71	18.68	49 16.77	0.20	40.38	20 48 36.19	8.50	
	13		D.	38.21	41.31	42.37	43.35	44.36						
	14	1 Picis Australis	C.	28.86	30.00	31.13	32.09	33.14	53 31.04	0.21	40.38	20 52 50.45	8.87	
	15	δ Microscopium	C.	20.51	21.65	22.57	23.57	24.60	58 22.58	0.21	40.38	20 57 41.99	8.74	
	16	Lacaille, 8701	C.	23.73	24.79	25.87	26.81	27.88	1 25.82	0.21	40.38	21 0 45.23	8.62	
	17	3 Picis Australis	C.	45.83	46.98	47.88	48.86	49.96	5 47.90	0.20	40.38	21 5 7.32	8.56	
	18	Lacaille, 8758	C.	47.39	48.41	49.41	50.45	51.52	9 49.44	0.21	40.38	21 9 8.85	8.74	
	19	Lacaille, 8777	C.	26.40	27.51	28.45	29.43	30.37	12 28.43	0.20	40.38	21 11 47.85	8.48	
	20	B. A. C., 7413	C.	45.43	46.47	47.37	48.35	49.20	15 47.36	0.19	40.38	21 15 6.79	8.32	
	21	B. A. C., 7434	C.	27.55	28.57	29.60	30.60	31.47	18 29.56	0.20	40.38	21 17 48.98	8.45	
	22	5 Picis Australis	C.	28.29	29.35	30.32	31.39	32.50	21 30.37	0.21	40.38	21 20 49.78	8.74	
	23	Lacaille, 8849	C.	24.01	25.09	26.11	27.16	28.12	27 26.10	0.21	40.38	21 26 45.51	8.64	
	24	Lacaille, 8862	C.	56.37	57.43	58.51	59.60	0.58	30 58.50	0.21	40.38	21 30 17.91	8.62	
	25	✡ (7) —33° 8′	C.	5.11	6.18	7.20	8.34	9.37	34 7.24	0.21	40.38	21 33 26.65	8.78	
	26	Lacaille, 8889	C.	39.37	40.50	41.58	42.51	43.47	34 41.49	0.21	40.38	21 34 0.89	8.77	
	27	Lacaille, 8906	C.	10.00	11.08	12.01	13.07	14.08	38 12.05	0.21	40.38	21 37 31.46	8.55	
	28	Lacaille, 8965	C.	32.24	33.37	34.39	35.44	36.39	48 34.37	0.21	40.38	21 47 53.78	8.62	
	29	Lacaille, 8981	C.	13.11	14.19	15.23	16.29	17.32	52 15.23	0.21	40.38	21 51 34.64	8.52	
	30	Lacaille, 9004	C.	57.84	58.87	59.76	0.88	1.89	55 59.85	0.21	40.38	21 55 19.26	8.55	
	31		B.	58.89	59.81	0.74	1.60	4.41						
	32	α Aquarii	C.	21.72	22.54	23.47	24.30	25.20	59 23.48	0.16	40.37	21 58 42.94	7.47	
	33		D.	42.63	45.35	46.33	47.20	47.98						
	34		B.	49.98	50.88	51.84	52.83	55.53						
	35	ϑ Aquarii	C.	12.93	13.93	14.75	15.64	16.54	10 14.83	0.17	40.37	22 9 34.28	7.70	
	36		D.	34.20	36.89	37.90	38.87	39.68						
	37		B.	13.17	14.11	15.08	15.90	18.63						
	38	ρ Aquarii	C.	36.22	37.16	37.97	39.10	39.81	13 38.03	0.17	40.37	22 12 57.49	7.68	
	39		D.	57.34	0.12	1.11	1.96	2.81						
	40		B.	7.58	8.57	9.55	10.55	13.60						
9	41	h^2 Sagittarii	C.	32.60	33.67	34.60	35.58	36.51	28 34.69	- -	- -	- - - -	- -	
	42		D.	55.91	58.96	59.91	0.93	1.89						
	43	B. A. C., 6753	C.	54.00	55.08	56.10	57.14	58.08	36 56.08	0.19	15.30	19 36 40.60	8.68	
	†44	λ Ursæ Minoris	B.	35.00	22.50	9.00	58.00	19.00	43 28.70	- -	- -	- - - -	- -	
	45	β Aquilæ	C	46.43	47.35	48.30	49.18	49.97	49 10.81	- -	- -	- - - -	- -	
	46		E.	30.41	31.35	34.23	34.98	35.87						
	47	B. A. C., 6877	D.	13.41	16.67	17.71	18.80	19.75	56 30.53	40.00	15.30	19 55 35.23	8.85	
	48		E.	40.44	41.43	44.72	45.66	46.70						
	†49	✡ (9.10) —16° 20′	C.	30.11	30.99	31.87	32.78	33.70	1 55.57	23.50	15.30	20 1 16.77	7.86	
	†50		E.	16.31	17.18	19.99	20.92	21.88						
	51	B. A. C., 6948	C.	30.21	31.40	32.39	33.47	34.49	7 32.39	0.18	15.30	20 7 16.91	8.69	
	52	Lacaille, 8399	C.	41.82	42.88	43.89	44.97	45.97	10 43.91	— 0.19	—15.30	20 10 28.42	— 8.88	

44. Steady.
49–50. Very dim.

Sept 6. 22*h*. 30*m*. Image east 0.02 *r*. Clamp west.
Azimuth cor., September 6, from λ Ursæ Minoris and α^2 Capricorni.
Azimuth cor., September 9, from λ Ursæ Minoris and β Aquilæ.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m*.	*n*.	*c*.
h.	s.	s.	s.	s.	s.
Sept. 6, 20.8	— 40.38	+ 0.005	— 0.105	+ 0.065	— 0.055
9, 19.6	— 15.30	— 0.009	— 0.091	+ 0.047	— 0.055

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s	s	
	1		A.	56.09	57.08	57.98	0.91	1.95						
	2		B.	20.57	21.61	22.51	23.49	26.43						
Sept. 12	3	μ^1 Sagittarii - - - -	C.	45.09	46.08	47.05	47.93	48.85	5 46.95	0.00	−15.95	18 5 30.99	— 7.61	Y.
	4		D.	7.63	10.56	11.50	12.40	13.21						
	5		E.	31.94	32.87	35.77	36.65	37.57						
	†6	δ Sagittarii - - - -	C.	23.86	24.89	25.91	26.96	27.91	12 25.91	— 0.05	15.95	18 12 9.91	8.19	
	7		B.	16.28	17.34	18.38	19.40	22.28						
	†8	λ Sagittarii - - - -	C.	41.57	42 60	43.54	44.60	45.51	19 43.60	0.04	15.94	18 19 27.62	7.95	
	9		D.	4.90	7.90	8.92	9.98	10.85						
	10		A.	44.80	45.68	46.63	49.69	50.79						
	11		B	10.43	11.44	12.49	13.51	16.71						
	12	Moon's 1st Limb - -	C.	36.28	37.13	38.06	39.08	39.97	36 38.13	0.01	15.94	18 36 22.18	- -	
	13		D.	59.75	2.88	3.86	4.88	5.83						
	14		E.	25.57	26.51	29.49	30.41	31.37						
	15		A.	5.90	6.89	7.90	10.90	11.98						
	16		B	31.47	32.55	33.58	34.51	37.47						
	17	σ Sagittarii - - - -	C.	57.09	58.08	59.10	59.92	0.87	46 59.08	0.00	15.93	18 46 43.14	8.17	
	18		D.	20.41	23.40	24.41	25.32	26.28						
	19		E.	45.81	46.73	49.79	50.68	51.67						
	20		B.	55.30	56.22	57.08	58.07	0.90						
	21	ζ Aquilæ - - - - -	C.	18.71	19.69	20.54	21.35	22.28	59 20.55	0.06	15.93	18 59 4.57	6.17	
	22		D.	40.24	43.09	44.09	44.93	45.77						
	23		B.	20.22	21.19	22.24	23.42	27.09						
	24	θ Lyræ - - - - -	C.	49.11	50.23	51.17	52.29	53.41	11 51.30	0.07	15.92	19 11 35.31	4.97	
	25		D.	15.59	19.28	20.37	21.50	22.47						
	26		C	55.48	56.60	57.67	58.63	59.69						
	27	2 Cygni - - - - -	D.	19.81	22.95	24.06	24.91	25.87	19 23.43	25.76	15.92	19 18 41.75	5 54	
	28		E	45.83	46.96	50.11	51.00	51.90						
	29	e Aquilæ - - - - -	D.	2.52	5.30	6.27	7.17	7.97	24 17.03	33.70	15.91	19 23 27.42	7.08	
	30		E.	25.34	26.27	28.97	29.81	30.70						
	31		B.	12.63	13.63	14.60	15.41	18.08						
	32	μ Aquilæ - - - - -	C.	35.55	36.58	37.51	38.35	39.23	27 37.49	0.05	15.91	19 27 21.53	6.66	
	33		D.	56.89	59.60	0.60	1.41	2.31						
	34		B.	14.90	15.81	16.73	17.61	20.31						
	35	σ Aquilæ - - - - -	C.	37.81	38.80	39.60	40.57	41.36	32 39.61	0.05	15.91	19 32 23.65	6.75	
	36		D.	58.80	1.59	2.51	3.43	4.28						
	37		C.	19.10	20.00	21.09	21.96	22.87						
	38	χ Aquilæ - - - - -	D.	40.81	43.57	44.41	45.31	46.22	36 43.97	22.91	15.91	19 36 5.15	6.48	
	39		E	3.90	4.80	7.66	8.45	9.40						
	40		B.	24.12	25.09	25.88	26.77	29.53						
	41	β Aquilæ - - - - -	C.	46.89	47.80	48.71	49.60	50.46	48 48.79	0.05	15.90	19 48 32.84	6.79	
	42		D.	8.08	10.91	11.78	12.70	13.55						
	43	B. A. C., 6877 - - -	C.	49.11	50.10	51.10	52.21	53.24	55 51.15	0.05	15.90	19 55 35.20	— 8.83	
	44	λ Ursæ Minoris - - -	C.	24.00	12.00	58.00	45.00	30.00	2 57.80	— 3.73	15.90	20 2 38.17	+ 76.31	
	45	α^1 Capricorni - - - -	A.	27.92	28.93	29.80	32.50	33.53	9 42.07	+ 34.52	15.89	20 10 0.70	— 7.70	
	46		B.	51.39	52.31	53.24	54.17	56.96						
	47		B.	15.42	16.39	17.27	18.12	20.88						
	48	α^2 Capricorni - - - -	C	38.70	39.64	40.49	41.38	42.26	10 40.59	— 0.04	15.89	20 10 24.66	7.71	
	49		D.	0.35	3.19	4.08	4.91	5.80						
	50	Lacaille, 8421 - - -	E	1.75	2.90	6.15	7.26	8.38	16 5.29	55.12	15.89	20 14 54.27	9.04	
	51	B. A. C., 7030 - - -	C	16.41	17.49	18.52	19.54	20.61	19 18.51	0.05	15.89	20 19 2.58	8.61	
	52	Lacaille, 8466 - - -	C.	44.44	45.53	46.56	47.52	48.49	22 46.51	— 0 05	−15.89	20 22 30.57	— 8.63	

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m.	n.	c
h.	s.	s.	s.	s.	s.
Sept. 12, 19.7	— 15.91	+ 0.027	+ 0.011	— 0.015	— 0.055

6, 8. Through clouds.
Azimuth cor., for Sept. 12 and 13, from δ Ursæ Minoris and μ^1 Sagittarii, of 13th.

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
Sept. 12	1	Lacaille, 8496	C.	50.22	51.30	52.39	53.37	54.37	27 52.33	— 0.04	—15.88	20 27 36.40	— 8.49	Y.
	2	Lacaille, 8517	C.	54.91	55.97	56.90	58.08	59.17	31 57.01	0.05	15.88	20 31 41.08	8.92	
	3	Lacaille, 8537	C.	6.62	7.62	8.60	9.64	10.73	35 8.64	0.05	15.88	20 34 52.71	8.66	
	4	B. A. C., 7181	C.	26.83	27.78	28.73	29.83	30.84	38 28.80	0.04	15.88	20 38 12.88	8.50	
	5	α Microscopii	D.	0.89	4.40	5.46	6.49	7.51	42 18.42	40.72	15.88	20 41 21.82	8.98	
	6		E.	28.61	29.51	32.79	33.75	34.77						
	7	Lacaille, 8630	D.	57.87	1.13	2.18	3.20	4.19	52 15.64	41.94	15.87	20 51 17.82	9.10	
	8		E.	26.12	27.18	30.50	31.46	32.53						
	9	δ Microscopii	C.	55.83	56.91	57.91	58.82	59.89	57 57.87	0.05	15.87	20 57 41.95	8.71	
	10	Lacaille, 8706	C.	8.91	9.98	10.97	11.91	12.91	2 10.94	0.05	15.87	21 1 55.02	8.86	
	11	Lacaille, 8736	C.	58.59	59.70	0.71	1.71	2.77	6 0.70	0.05	15.87	21 5 44.78	8.66	
	12		B.	9.94	10.89	11.80	12.60	15.43						
	13	β Aquarii	C.	32.91	33.70	34.67	35.51	36.41	24 34.65	0.04	15.86	21 24 18.75	7.59	
	14		D.	53.90	56.63	57.58	58.51	59.34						
13	15	μ^1 Sagittarii	B.	20.82	21.88	22.77	23.73	26.59	5 47.18	0.04	16.18	18 5 30.95	7.60	
	16		D.	7.83	10.60	11.61	12.57	13.37						
	17		B.	18.50	32.50	48.00	3.00	49.00						
	18	δ Ursæ Minoris	C.	41.00	58.00	12.00	28.50	43.00	17 13.00	- -	- -	- - - -	- -	
	19		D.	37.50	23.00	39.00	54.00	8.00						
	20	B. A. C., 6327	C.	34.41	35.42	36.40	37.39	38.38	28 36.40	0.04	16.17	18 28 20.19	8.19	
	21		A.	25.41	26.41	27.32	30.59	31.60						
	22		B.	51.18	52.15	53.20	54.13	57.17						
	23	φ Sagittarii	C.	16.75	17.81	18.71	19.75	20.71	37 18.72	0.00	16.16	18 37 2.55	8.15	
	24		D.	40.35	43.37	44.41	45.32	46.36						
	25		E.	5.90	6.85	9.93	10.86	11.80						
	26		A.	6.21	7.27	8.25	11.12	12.19						
	27		B.	31.80	32.82	33.82	34.87	37.85						
	28	σ Sagittarii	C.	57.30	58.24	59.29	0.18	1.12	46 59.20	0.00	16.16	18 46 43.04	8.15	
	29		D.	20.68	23.70	24.75	25.71	26.64						
	30		E.	46.15	47.11	50.07	50.96	51.92						
	31	Lacaille, 7953	C.	12.62	13.77	14.87	15.88	16.90	52 14.81	0.05	16.15	18 51 58.61	8.65	
	32	B. A. C., 6499	D.	12.51	15.81	16.70	17.82	18.87	56 16.34	26.28	16.15	18 55 33.91	8.50	
	33	Lacaille, 7998	C.	56.09	57.12	58.10	59.22	0.29	59 58.16	— 0.05	16.15	18 59 41.97	8.72	
	34		A.	0.11	1.21	2.22	5.49	6.56						
	†35	Lacaille, 8028	C.	55.37	56.48	57.46	58.45	59.47	3 57.36	+ 0.02	16.15	19 3 41.23	8.75	
	36		E.	48.17	49.13	52.39	53.46	54.39						
	†37	* (7) —34° 5′	B.	28.58	29.70	30.71	31.71	34.97	3 58.23	— 0.04	16.15	19 3 42.04	8.75	
	†38		D.	21.43	24.81	25.81	26.81	27.77						
	39		B.	12.38	13.19	13.91	14.85	17.63						
	40	ω Aquilæ	C.	35.23	36.16	37.10	37.97	38.87	11 37.17	0.05	16.14	19 11 20.98	6.35	
	41		D.	56.70	59.45	0.50	1.31	2.25						
	42		B.	42.30	43.30	44.30	45.36	48.32						
	43	χ^1 Sagittarii	C.	7.49	8.40	9.41	10.37	11.25	17 9.42	0.04	16.14	19 16 53.24	8.17	
	44		D.	30.52	33.67	34.64	35.52	36.50						
	45	Lacaille, 8120	C.	36.16	37.21	38.28	39.34	40.38	21 38.27	0.05	16.13	19 21 22.09	8.69	
	46	B. A. C., 6684	C.	33.29	34.36	35.37	36.31	37.31	24 35.33	0.05	16.13	19 24 19.15	8.58	
	47		B.	8.13	9.18	10.11	11.11	14.29						
	48	h^2 Sagittarii	C.	33.39	34.38	35.37	36.31	37.28	28 35.39	— 0.05	16.13	19 28 19.21	— 8.24	
	49		D.	56.57	59.58	0.72	1.70	2.68						
	50		A.	15.80	16.68	17.71	20.91	21.89						
	51		B.	41.06	41.99	42.93	43.80	46.84						
	†52	Moon's 1st Limb	C.	6.02	7.05	7.95	8.90	9.86	35 8.02	0.00	—16.13	19 34 51.89	- -	
	53		D.	29.25	32.19	33.17	34.13	35.16						
	54		E.	54.38	55.35	58.21	59.21	0.11						

35. Southward; close double.
37–38. Northward.
52. Steady.

Sept. 12. 21*h*. 30*m*. Image west 0.03*r*. Clamp west.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m*.	*n*.	*c*.
h. Sept. 13, 19.6	s. — 16.12	s. + 0.038	s. + 0.011	s. — 0.015	s. — 0.055

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
	1		B.	9.41	10.40	11.39	12.28	15.08						
Sept. 13	2	*f* Sagittarii	C.	33.55	34.52	35.51	36.41	37.36	38 35.56	— 0.04	—16.12	19 38 19.39	— 7.95	Y.
	3		D.	55.99	58.93	59.93	0.85	1.80						
	4		B.	55.09	56.13	56.95	57.91	0.41						
	5	α Aquilæ	C.	18.16	19.12	19.92	20.85	21.71	44 19.99	0.05	16.12	19 44 3.82	6.71	
	6		D.	39.40	42.22	43.13	43.96	44.87						
	7		A.	35.00	35.80	36.72	39.52	40.56						
	8		B.	58.61	59.63	0.52	1.50	4.29						
	9	*g* Sagittarii	C.	22.42	23.40	24.33	25.27	26.11	50 24.24	0.01	16.12	19 50 8.11	7.74	
	10		D.	44.20	47.09	48.00	48.91	49.88						
	11		E.	7.99	8.83	11.61	12.42	13.36						
	12	B. A. C., 6877	C.	49.26	50.29	51.26	52.42	53.35	55 51.32	0.05	16.11	19 55 35.16	8.82	
	13	B. A. C., 6899	C.	3.63	4.79	5.83	6.78	7.67	59 5.74	0.05	16.11	19 58 49.58	— 8.63	
	14	λ Ursæ Minoris	C.	24.00	12.00	59.00	47.00	33.00	2 59.00	3.73	16.11	20 2 39.16	+ 77.35	
	15		C.	38.99	39.87	40.76	41.75	42.54						
	16	α^2 Capricorni	D.	0.45	3.23	4.28	5.17	5.96	11 3.76	23.03	16.10	20 10 24.62	— 7.70	
	17		E.	23.72	24.64	27.38	28.33	29.27						
	18	Lacaille, 8421	D.	33.91	37.51	38.60	39.62	40.70	15 38.07	27.62	16.10	20 14 54.35	9.03	
	19		B.	50.56	51.38	52.26	53.11	56.08						
	20	ρ Capricorni	C.	14.37	15.29	- -	17.06	17.96	21 16.27	0.04	16.10	20 21 0.13	7.98	
	21		D.	36.55	39.49	40.39	41.27	42.11						
	22	Lacaille, 8485	C.	37.11	38.15	39.09	40.10	41.16	25 39.12	0.05	16.09	20 25 22.98	8.64	
	23	B. A. C., 7111	C.	54.28	55.22	56.25	57.37	58.26	29 56.28	0.04	16.09	20 29 40.14	8.24	
	24	Lacaille, 8529	C.	4.96	6.08	7.07	8.10	9.00	33 7.04	0.05	16.09	20 32 50.90	8.79	
	25	B. A. C., 7168	C.	29.52	30.57	31.46	32.51	33.51	36 31.51	0.05	16.09	20 36 15.38	8.57	
	26	B. A. C , 7187	C.	20.94	22.07	23.09	24.10	24.95	39 23.03	0.04	16.09	20 39 6.90	8.47	
	27	Lacaille, 8587	C.	31.18	32.26	33.20	34.29	35.37	42 33.26	0.05	16.08	20 42 17.13	8.82	
	28	Lacaille, 8610	C.	13.89	14.81	15.88	16.98	17.94	45 15.90	0.05	16.08	20 44 59.77	8.73	
	29	B. A. C., 7252	C.	50.28	51.37	52.27	53.21	54.26	48 52.28	0.04	16.08	20 48 36.15	8.52	
	30	1 Piscis Australis	C.	4.50	5.43	6.48	7.57	8.59	53 6.51	0.05	16.08	20 52 50.39	8.83	
	31	B. A. C., 7300	D.	49.85	53.11	54.18	55.09	55.98	55 53.64	24.90	16.07	20 55 12.66	8.43	
	32	Lacaille, 8691	C.	26.37	27.48	28.41	29.48	30.46	59 28.44	0.04	16.07	20 59 12.32	8.52	
	33		B.	52.92	53.83	54.88	55.94	59.20						
	34	ζ Cygni	C.	19.17	20.15	21.17	21.98	23.05	7 21.15	0.06	16.07	21 7 5.02	6.36	
	35		D.	43.11	46.46	47.49	48.51	49.43						
	36		B.	28.91	29.91	30.86	31.80	34.70						
14	37	e^2 Sagittarii	C.	52.77	53.76	54.59	55.52	56.42	34 54.61	0.18	16.25	19 34 38.18	7.75	
	38		D.	14.55	17.41	18.48	19.32	20.20						
	39		B.	34.08	34.93	35.87	36.89	39.57						
	40	γ Aquilæ	C.	57.25	58.20	59.10	59.91	0.82	39 59.08	0.15	16.25	19 39 42.67	6.54	
	41		D.	18.63	21.46	22.35	23.20	23.95						
	42		B.	55.30	56.28	57.18	58.08	0.76						
	43	α Aquilæ	C.	18.36	19.27	20.20	21.09	21.89	44 20.18	0.15	16.26	19 44 3.77	6.70	
	44		D.	39.56	42.35	43.30	44.11	44.98						
	45		A.	35.21	36.20	37.09	39.88	40.89						
	46		B.	59.09	59.98	0.97	1.88	4.67						
	47	*g* Sagittarii	C.	22.70	23.70	24.59	25.55	26.48	50 24.57	0.15	16.26	19 50 8.17	7.77	
	48		D.	44.56	47.41	48.40	49.31	50.19						
	49		E.	8.17	9.14	11.88	12.73	13.68						
	50	B. A. C., 6886	C.	58.90	0.09	1.18	2.16	3.22	57 1.11	— 0.21	16.26	19 56 44.64	8.84	
	51	λ Ursæ Minoris	C.	18.00	6.00	50.00	39.00	25.00	2 51.60	- -	- -	- - - -	- -	
	52	α^1 Capricorni	A.	28.46	29.41	30.30	33.11	34.10						
	53		B.	51.89	52.85	53.80	54.66	57.52	9 42.61	+ 34.39	—16.26	20 10 0.73	— 7.69	

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
Sept. 13, 19.6	— 16.12	+ 0.038	+ 0.011	— 0.015	— 0.055

September 13. 21*h.* 10*m.* Image west *r.* 0.03. Clamp west.

Hosted by Google

DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
	1		B.	15.84	16.91	17.73	18.65	21.45						
Sept. 14	2	α^2 Capricorni	C.	39.27	40.22	41.12	41.95	42.87	10 41.12	— 0.18	—16.26	20 10 24.68	— 7.70	Y.
	3		D.	0.78	3.66	4.61	5.47	6.31						
	4	B. A. C., 2787, S. P.	C.	12.50	0.50	48.50	37.00	26.00	14 48.90	+ 0.04	16.27	8 14 32.67	26.00	
	5		A.	26.75	27.65	28.46	31.40	32.33						
	6		B.	50.78	51.68	52.63	53.51	56.41						
	7	ρ Capricorni	C.	14.72	15.67	16.61	17.58	18.48	21 16.60	— 0.15	16.27	20 21 0.18	7.97	
	8		D.	36.93	39.74	40.71	41.60	42.48						
	9		E.	0.88	1.70	4.59	5.49	6.31						
	10		A.	6.51	7.50	8.36	11.21	12.21						
	11		B.	31.09	31.91	32.76	33.82	36.82						
	†12	Moon's 1st Limb	C.	55.39	56.41	57.30	58.29	59.11	29 57.31	0.15	16.27	20 29 40.88	- -	
	13		D.	17.90	20.80	21.79	22.79	23.64						
	14		E.	42.47	43.31	46.26	47.15	47.99						
	15		B.	3.07	3.99	4.90	5.81	8.68						
	16	υ Capricorni	C.	27.09	27.98	28.92	29.88	30.80	32 28.97	0.18	16.27	20 32 12.51	8.01	
	17		D.	49.23	52.17	53.11	54.04	54.87						
	18		C.	27.91	28.89	29.68	30.64	31.51						
	19	ε Aquarii	D.	49.13	51.95	52.91	53.82	54.61	40 52.47	22.92	16.28	20 40 13.27	7.64	
	20		E.	12.29	13.21	16.00	16.88	17.67						
	21	Lacaille, 8608	C.	57.29	58.38	59.30	0.31	1.40	44 59.34	0.21	16.28	20 44 42.85	8.77	
	22	Lacaille, 8619	B.	10.20	11.18	12.25	13.31	16.56	47 39.14	0.20	16.28	20 47 22.66	8.77	
	23		D.	1.81	5.10	6.08	6.96	7.98						
	24	* (7) —32° 2′	C.	41.96	42.89	43.92	44.89	45.98	47 43.93	0.21	16.28	20 47 27.44	8.77	
	25	Lacaille, 8640	B.	31.91	32.90	33.93	35.05	38.11	53 0.36	0.20	16.28	20 52 43.88	8.66	
	26		D.	22.54	25.78	26.83	27.84	28.75						
	27	* (7.8) —30° 19′	C.	1.29	2.41	3.43	4.50	5.50	53 3.43	0.20	16.28	20 52 46.94	8.66	
	28		B.	58.12	59.12	0.09	1.00	3.89						
	29	B. A. C., 7312	C.	22.12	23.09	23.92	24.93	25.86	57 24.06	0.18	16.28	20 57 7.60	8.01	
	30		D.	44.13	47.07	47.97	48.89	50.77						
	31	3 Piscis Australis	C.	21.65	22.80	23.74	24.75	25.77	5 23.74	0.20	16.29	21 5 7.25	8.54	
	32	Lacaille, 8758	C.	23.40	24.47	25.39	26.37	27.44	9 25.41	— 0.20	16.29	21 9 8.92	8.71	
	33		A.	54.21	56.22	57.93	3.88	6.10						
	34		B.	43.08	44.83	46.86	48.87	54.69						
	35	α Cephei	C.	31.42	33.68	35.36	37.29	- -	15 35.18	+ 0.13	16.29	21 15 19.01	4.98	
	36		D.	16.27	22.00	24.11	25.91	27.66						
	37		E.	4.96	6.85	12.50	14.17	16.17						
	38		A.	52.82	55.39	57.81	5.71	8.71						
	39		B.	59.26	2.12	4.98	7.42	15.22						
	40	β Cephei	C.	6.30	8.81	11.26	13.91	16.21	27 11.09	— 0.03	16.30	21 26 54.76	4.50	
	41		D.	7.30	15.27	17.96	20.39	23.10						
	42		E.	13.73	16.20	23.93	26.41	29.10						
	43	Lacaille, 8911	C.	27.67	28.74	29.81	30.91	31.93	38 29.81	0.21	16.30	21 38 13.30	8.76	
	44	Lacaille, 8934	C.	11.91	12.91	13.88	14.88	15.88	42 13.89	0.20	16.30	21 41 57.39	8.45	
	45	Lacaille, 8965	C.	8.25	9.33	10.32	11.34	12.39	48 10.33	0.20	16.30	21 47 53.82	8.61	
	46	Lacaille, 8981	C.	49.11	50.21	51.16	52.21	53.23	51 51.18	0.20	16.31	21 51 34.67	8.52	
	47	Lacaille, 9000	C.	45.60	46.73	47.79	48.82	49.90	54 47.77	0.21	16.31	21 54 31.25	8.67	
	48		C.	57.60	58.53	59.41	0.30	1.14						
	49	α Aquarii	D.	18.67	21.42	22.38	23.19	23.98	59 21.82	22.57	16.31	21 58 42.94	7.48	
	50		E.	41.31	42.22	44.89	45.71	46.60						
	51	B. A. C., 7715	C.	23.61	24.70	25.69	26.70	27.70	2 25.68	— 0.20	—16.31	22 2 9.17	— 8.48	

12. Good observation.
Azimuth cor., September 14, from λ Ursæ Minoris and α^2 Capricorni.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
Sept. 14, 21.1	— 16.29	— 0.024	— 0.107	+ 0.053	— 0.055

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DATE.	Number.	OBJECT.	Set	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
	1		A.	2.75	3.70	4.53	7.29	8.31						
	2		B.	25.86	26.86	27.76	28.64	31.44						
Sept. 14	3	θ Aquarii - - - -	C.	48.98	49.89	50.80	51.68	52.47	9 50.73	— 0.14	—16.31	22 9 34.27	— 7.71	Y.
	4		D.	10.21	12.92	13.86	14.68	15.54						
	5		E.	33.12	33.96	36.80	37.67	38.50						
	6	Lacaille, 9109 - - -	C.	28.70	29.73	30.63	31.63	32.58	14 30.65	0.20	16.32	22 14 14.14	8.29	
	7	Lacaille, 9127 - - -	C.	18.70	19.74	20.72	21.78	22.75	17 20.74	0.20	16.32	22 17 4.22	8.34	
	8	Lacaille, 9135 - - -	C.	13.21	14.31	15.27	16.21	17.17	20 15.23	0.20	16.32	22 19 58.72	8.31	
	9	Lacaille, 9169 - - -	C.	4.23	5.31	6.21	7.22	8.29	26 6.25	0.20	16.32	22 25 49.73	8.42	
	10	B. A. C., 7872 - - -	B.	37.81	38.80	39.93	40.92	44.31	29 6.96	0.21	16.32	22 28 50.43	8.49	
	11		D.	29.64	32.91	34.10	35.08	36.09						
	12	* (7) —32° 22′ - -	C.	8.22	9.36	10.35	11.44	12.50	29 10.37	0.21	16.32	22 28 53.84	8.49	
	13	B. A. C., 7895 - - -	C.	55.81	56.93	57.91	58.91	59.90	32 57.89	0.20	16.32	22 32 41.36	8.43	
	14	Lacaille, 9244 - - -	D.	50.71	53.91	55.11	56.21	57.30	40 8.08	40.70	16.33	22 39 11.05	8.51	
	15		E.	18.11	19.12	22.48	23.42	24.47						
	16		B.	50.73	51.80	52.76	53.79	57.09						
	17	α Piscis Australis - -	C.	17.18	18.18	19.27	20.22	21.24	50 19.23	0.20	16.33	22 50 2.69	8.33	
	18		D.	41.43	44.71	45.73	46.64	47.62						
	19		B.	5.77	6.75	7.68	8.58	11.41						
15	20	α Delphini - - - -	C.	29.43	30.37	31.23	32.21	33.09	33 31.26	0.15	16.40	20 33 14.70	6.63	
	21		D.	51.00	53.90	54.91	55.81	56.74						
	22		A.	41.73	42.59	43.48	46.21	47.23						
	23		B.	4.84	5.81	6.81	7.72	10.44						
	24	ε Aquarii - - - -	C.	28.12	29.09	29.91	30.79	31.69	40 29.86	0.14	16.41	20 40 13.31	7.63	
	25		D.	49.37	52.19	53.11	53.91	54.79						
	26		E.	12.45	13.38	16.11	16.95	17.86						
	27		A.	4.85	5.88	6.92	10.07	11.08						
	28		B.	30.62	31.68	32.70	33.73	36.85						
	29	32 Vulpeculæ - - - -	C.	56.48	57.52	58.48	59.59	0.51	48 58.42	0.11	16.41	20 48 41.90	6.27	
	30		D.	19.98	23.22	24.24	25.21	26.11						
	31		E.	45.77	46.71	49.80	50.75	51.76						
	32		A.	39.18	40.16	41.10	44.00	44.95						
	33		B.	3.16	4.15	5.12	6.07	9.10						
	34	θ Capricorni - - - -	C.	27.21	28.26	29.08	29.97	30.92	58 29.03	0.15	16.41	20 58 12.47	8.01	
	35		D.	49.09	52.09	53.05	53.89	54.68						
	36		E.	13.15	14.09	16.89	17.77	18.67						
	37		B.	57.25	58.20	59.20	0.09	2.78						
	38	ν Aquarii - - - -	C.	20.49	21.48	22.33	23.26	24.09	2 22.37	0.17	16.42	21 2 5.78	7.76	
	39		D.	41.90	44.73	45.72	46.59	47.41						
	40		B.	26.76	27.67	28.60	29.46	32.28						
17	41	θ Aquarii - - - -	D	- -	13.61	14.60	15.53	16.34	10 6.89	15.47	17.09	22 9 34.33	7.70	
	42		E.	33.82	34.68	37.40	38.38	39.21						
	43		C.	48.47	49.34	50.15	50.93	51.83						
	44	γ Aquarii - - - -	D.	9.49	12.19	13.09	13.90	14.81	15 12.62	22.53	17.09	22 14 33.00	7.54	
	45		E.	32.20	33.11	35.70	36.56	37.47						
	46		C.	32.63	33.49	34.31	35.17	36.11						
	†47	η Aquarii - - - -	D.	53.51	56.28	57.17	- -	58.83	28 56.63	22.41	17.09	22 28 17.14	7.53	
	48		E.	16.21	17.11	19.89	20.73	21.61						
	49		B.	28.28	29.12	30.11	30.94	33.80						
	50	ζ Pegasi - - - -	C.	51.58	52.43	53.29	54.15	55.18	34 53.25	0.10	17.09	22 34 36.06	7.33	
	51		D.	12.59	15.52	16.39	17.23	18.09						
	52		B.	51.32	52.42	53.45	54.52	57.71						
	53	α Piscis Australis - -	C.	17.65	18.81	19.87	21.09	22.08	50 19.87	— 0.13	—17.08	22 50 2.65	— 8.33	
	54		D.	42.09	45.28	46.26	47.33	48.23						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m.	n.	c.
h.	s.	s.	s.	s.	s.
Sept. 14, 21.1	— 16.29	— 0.024	— 0.107	+ 0.053	— 0.055
15, 20.7	— 16.41	— 0.024	— 0.107	+ 0.053	— 0.055

47. Through thick clouds. *r.*
Sept. 14. 22*h.* 55*m.* Image east 0.03. Clamp west. Fine night; stars steady.

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
	1		A.	1.69	2.66	3.55	6.34	7.20						
	2		B.	25.18	25.94	26.80	27.72	30.53						
Sept. 17	3	Moon's 1st Limb	C.	48.29	49.26	50.11	50.97	51.81	56 50.01	— 0.08	—17.08	22 56 32.85	- -	Y.
	4		D.	9.85	12.48	13.42	14.27	15.11						
	5		E.	32.89	33.75	36.44	37.39	38.22						
	6		A.	31.73	32.73	33.69	36.36	37.31						
	7		B.	54.55	55.52	56.47	57.31	0.15						
	8	γ Piscium	C.	17.40	18.34	19.29	20.18	20.99	10 19.26	0.07	17.08	23 10 2.11	— 7.60	
	9		D.	38.44	41.35	42.16	42.91	43.80						
	10		E.	1.23	2.20	4.97	5.81	6.62						
	11	Lacaille, 9436	E.	36.02	36.92	40.23	41.14	42.11	12 39.28	51.60	17.08	23 11 30.61	8.15	
	12		A.	22.61	23.49	24.32	27.07	28.09						
	13		B	45.35	46.29	47.19	48.10	51.00						
	14	κ Piscium	C.	8.29	9.22	10.06	10.88	11.79	20 10.01	0.07	17.08	23 19 52.86	7.56	
	15		D.	29.31	31.93	32.81	33.68	34.48						
	16		E.	51.91	52.87	55.63	56.51	57.34						
	17	✪ (7) —22° 38′	C.	11.50	12.51	13.43	14.32	15.28	25 13.41	0.13	17.08	23 24 56.20	7.90	
	18	Lacaille, 9534	C	3.95	5.12	6.22	7.21	8.23	30 6.15	0.14	17.08	23 29 48.93	8.12	
	19	Lacaille, 9547	C.	49.89	51.11	52.11	53.23	54.29	32 52.13	0.14	17.07	23 32 34.91	8.12	
	20	Lacaille, 9568	C.	5.47	6.51	7.61	8.67	9.58	36 7.57	0.14	17.07	23 35 50.36	7.98	
	21	Lacaille, 9605	C.	26.67	27.81	28.80	29.86	30.78	42 28.78	0.13	17.07	23 42 11.57	7.93	
	22	Lacaille, 9625	C.	0.80	2.12	3.11	4.12	5.23	45 3.08	0.14	17.07	23 44 45.86	8.04	
	23	Lacaille, 9663	D.	12.30	15.53	16.59	17.60	18.69	51 16.14	27.17	17.07	23 50 31.89	7.99	
	24	Lacaille, 9695	C.	33.37	34.50	35.44	36.41	37.43	54 35.43	0.14	17.07	23 54 18.22	7.87	
	25	Lacaille, 9706	B.	6.78	7.87	8.84	9.88	13.00	57 35.17	0.14	17.07	23 57 17.97	7.86	
	26		D.	57.30	0.48	1.54	2.55	3.49						
	27	Lacaille, 9707	C.	35.87	36.87	37.89	38.93	39.91	57 37.89	0.14	17.07	23 57 20.69	7.86	
	28	Lacaille, 9735	D.	44.52	47.72	48.87	49.90	50.92	1 48.39	27.29	17.07	0 0 4.03	7.91	
	29	B. A. C., 23	C.	50.35	51.49	52.42	53.39	54.40	4 52.41	0.13	17.07	0 4 35.21	7.78	
	30	Lacaille, 17	C.	11.52	12.71	13.74	14.76	15.78	8 13.70	0.14	17.07	0 7 56.49	7.82	
	31	Lacaille, 37	C.	0.68	1.70	2.80	3.78	4.82	12 2.76	0.14	17.07	0 11 45.55	7.76	
	32	B. A. C., 77	C.	34.65	35.74	36.75	37.79	38.77	16 36.74	0.14	17.07	0 16 19.53	7.73	
	33		B.	53.74	54.61	55.51	56.42	59.12						
	34	12 Ceti	C.	16.63	17.54	18.43	19.29	20.20	23 18.40	0.11	17.06	0 23 1.23	7.54	
	35		D.	37.48	40.47	41.39	42.27	42.96						
	36		C.	52.07	52.98	53.86	54.76	55.63						
18	†37	ζ Pegasi	D.	13.32	16.20	17.09	17.88	18.66	35 16.62	22.85	17.67	22 34 36.10	7.33	
	38		E.	36.51	37.39	40.17	40.93	41.82						
	39		A.	25.45	26.56	27.48	30.56	31.55						
	40		B.	51.88	52.98	53.93	55.13	58.30						
	41	α Piscis Australis	C.	18.29	19.32	20.37	21.38	22.40	50 20.36	0.09	17.65	22 50 2.62	8.32	
	42		D.	42.62	45.91	46.95	47.92	48.92						
	43		E	9.04	9.95	13.11	13.94	15.06						
	44		B.	45.93	46.83	47.78	48.59	51.33						
	†45	κ Piscium	C.	8.88	9.77	10.48	11.38	12.24	20 10.55	0.10	17.61	23 19 52.85	7.56	
	46		D.	29.77	32.46	33.38	34.28	35.18						
	47		B.	45.63	46.58	47.49	48.39	51.17						
	48	ι Piscium	C.	8.53	9.47	10.31	11.21	12.00	33 10.33	0.09	17.59	23 32 52.65	— 7.57	
	49		D.	29.64	32.35	33.26	34.11	34.85						
	50		B.	16.48	17.37	18.17	19.10	21.71						
	51	Moon's 1st Limb	C.	39.51	40.50	41.32	42.21	43.11	42 41.35	— 0.10	—17.58	23 42 23.67	- -	
	52		D.	0.78	3.70	4.66	5.42	6.22						

37. Through clouds.
45. Fine observation.

Sept. 17. 0*h.* 30*m.* Image $\overset{r.}{0.00}$. Clamp west.
Azimuth cor., Sept. 17–19, from Polaris and θ^1 Ceti of 19th.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
Sept. 17, 23.0	— 17.08	+ 0.012	— 0.050	+ 0.036	— 0.055
18, 23.2	— 17.62	+ 0.079	— 0.041	+ 0.036	— 0.055

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m s.	s.	h. m. s.	s.	
	1		B.	19.73	20.57	21.57	22.51	25.11						
Sept. 18	†2	Moon's 2d Limb - -	C.	43.09	43.93	44.88	45.78	46.58	44 44.81	— 0.10	—17.58	23 44 27.14	- -	Y.
	3		D.	4.32	7.22	8.14	8.96	9.80						
	4		B.	7.85	8.81	9.77	10.70	13.31						
	5	ω Piscium - - - -	C.	30.80	31.81	32.67	33.56	34.40	52 32.64	0.09	17.57	23 52 14.98	— 7.56	
	6		D.	51.86	54.68	55.68	56.46	57.28						
	7		B.	36.82	37.78	38.71	39.60	42.23						
	8	Weisse, 1179 - - -	C.	59.69	0.58	1.40	2.32	3.20	58 1.45	0.09	17.56	23 57 43.79	7.56	
	9		D.	20.67	23.29	24.30	25.15	25.96						
	10		B.	45.19	46.10	46.86	47.83	50.73						
	11	Weisse, XXIII, 1269 .	C.	8.43	9.28	10.18	11.10	11.93	2 10.20	0.09	17.56	0 1 52.56	7.56	
	12		D.	29.83	32.57	33.49	34.33	35.22						
	13		B.	57.97	58.82	59.73	0.61	3.46						
	14	Weisse, 4 - - - -	C.	21.23	22.20	23.11	24.11	24.92	2 23.11	0.09	17.55	0 2 5.47	7.56	
	15		D.	42.78	45.57	46.52	47.39	48.29						
	16	✡ (8) +11° 48′ - -	C.	4.61	5.49	6.34	7.28	8.11	3 6.37	— 0.09	17.55	0 2 48.72	7.56	
	17		B.	46.88	47.75	48.63	49.48	52.22						
	18	35 Piscium - - - -	C.	9.72	10.71	11.53	12.48	13.33	8 11.37	+ 0.09	17.55	0 7 53.91	7.57	
	19		D.	30.90	33.50	34.51	35.31	- -						
	20	35² Piscium - - - -	E.	54.29	55.18	57.96	58.83	59.63	8 57.18	— 45.33	17.55	0 7 54.30	7.56	
	21	Groombridge, 67 - - -	C.	13.00	24.00	35.00	46.50	58.00	23 35.30	0.31	17.53	0 23 17.46	23.75	
	22		D.	5.96	8.72	9.76	10.56	11.40						
	23	B. A. C., 147 - - -	E.	28.87	29.68	32.44	33.25	34.17	29 20.48	— 33.71	17.52	0 28 29.25	— 7.53	
	24	B. A. C., 4281, S. P. -	C.	41.00	31.00	22.00	12.50	4.00	37 22.10	+ 0.18	17.51	0 37 4.77	+ 9.19	
	25		B.	46.55	47.44	48.38	49.31	51.98						
19	26	κ Piscium - - - -	C.	9.30	10.21	11.00	12.01	12.84	20 11.14	— 0.14	18.09	23 19 52.92	— 7.56	
	27		D.	30.30	33.11	34.00	34.90	35.82						
	28		B.	46.19	47.11	47.97	48.95	51.68						
	29	ι Piscium - - - -	C.	9.10	9.87	10.91	11.80	12.67	33 10.87	0.13	18.10	23 32 52.64	7.57	
	30		D.	30.08	32.86	33.78	34.65	35.47						
	31		B.	26.59	27.51	28.39	29.26	32.17						
	32	B. A. C., 8247 - - -	C.	50.46	51.37	52.29	53.18	54.18	35 52.31	0.13	18.10	23 35 34.08	7.49	
	33		D.	12.43	15.39	16.28	17.13	18.10						
	34		B.	41.12	42.94	44.91	46.82	52.09						
	35	B. A. C., 8280 - - -	C.	25.84	27.70	29.63	31.12	32.87	42 29.36	0.13	18.10	23 42 11.14	8.15	
	36		D.	6.86	12.03	13.90	15.48	17.17						
	37	B. A. C., 8314 - - -	C.	25.08	28.78	31.65	35.28	37.92	48 31.74	0.16	18.10	23 48 13.48	9.79	
	38		B.	8.41	9.30	10.22	11.13	13.91						
	39	ω Piscium - - - -	C.	31.31	32.30	33.21	33.98	34.79	52 33.18	0.13	18.10	23 52 14.94	7.56	
	40		D.	52.53	55.33	56.28	57.11	57.88						
	41		B.	7.69	8.55	9.51	10.54	13.29						
	42	Weisse, 1208 - - -	C.	31.08	31.99	32.86	33.70	34.58	59 32.83	0.14	18.11	23 59 14.57	7.62	
	43		D.	52.38	55.17	56.19	57.04	57.87						
	44	✡ (8) +11° 48′ - -	D.	26.57	29.33	30.33	31.18	31.96	3 41.32	34.46	18.11	0 2 48.75	7.56	
	45		E.	49.84	50.74	53.51	54.48	55.31						
	46		B.	47.22	48.16	49.08	49.91	52.68						
	47	35 Piscium - - - -	C.	10.21	11.13	12.07	12.92	13.80	8 12.06	0.13	18.11	0 7 53.82	7.57	
	48		D.	31.40	34.29	35.15	36.08	36.85						
	49	35² Piscium - - - -	A.	24.53	25.47	26.38	29.07	30.04	8 12.42	— 0.05	—18.11	0 7 54.25	— 7.56	
	50		E.	54.85	55.73	58.53	59.39	0.20						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
Sept. 18, 23. 2	— 17.62	+ 0.079	— 0.041	+ 0.036	— 0.055
19, 0. 2	— 18.11	— 0.028	— 0.082	+ 0.036	— 0.055

2. Limb very jagged.

Sept. 18. 1*h.* 15*m.* Image west 0.02*r.* Clamp west.

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
	1		B.	24.85	25.73	26.66	27.42	30.21						
Sept. 19	2	*d* Piscium	C.	47.72	48.64	49.51	50.38	51.27	13 49.55	— 0.13	—18.11	0 13 31.30	— 7.56	Y.
	3		D.	8.87	11.68	12.62	13.49	14.22						
	4		B.	54.71	55.51	56.50	57.40	0.09						
	5	12 Ceti	C.	17.61	18.49	19.39	20.29	21.14	23 19.41	0.14	18.12	0 23 1.15	7.55	
	6		D.	38.76	41.52	42.39	43.23	44.08						
	7		B.	5.82	6.71	7.68	8.58	11.44						
	†8	Moon's 2d Limb	C.	29.33	30.28	31.12	32.05	32.84	30 31.13	0.14	18.12	0 30 12.87	- -	
	9		D.	50.81	53.73	54.69	55.52	56.41						
	10	B. A. C., 203	E.	59.92	0.79	3.78	4.64	5.55	39 2.94	48.72	18.13	0 37 56.09	7.51	
	11		B.	26.21	27.19	28.18	29.09	31.81						
	12	δ Piscium	C.	49.22	50.26	51.13	51.99	52.85	41 51.10	0.13	18.13	0 41 32.84	7.58	
	13		D.	10.35	13.22	14.15	15.07	15.81						
	14	Lacaille, 241	D.	7.17	10.21	11.18	12.09	13.04	47 10.74	25.00	18.13	0 46 27.60	7.46	
	15	Lacaille, 256	D.	55.41	58.66	59.69	0.61	1.60	49 59.19	25.68	18.13	0 49 15.38	7.44	
	16	α Sculptoris	D.	39.30	42.32	43.43	44.54	45.46	52 43.01	26.08	18.13	0 51 58.79	7.44	
	17		B.	41.88	42.86	43.80	44.68	47.38						
	18	ε Piscium	C.	4.84	5.71	6.59	7.50	8.31	56 6.65	0.13	18.13	0 55 48.39	7.58	
	19		D.	25.90	28.72	29.68	30.58	31.39						
	20	✡ (6.7) —24° 45′	D.	7.44	10.53	11.57	12.52	13.47	0 11.11	24.85	18.14	0 59 28.12	7.36	
	21	Polaris	C.	29.00	6.00	42.00	20.00	52.00	9 41.80	- -	- -	- - - -	- -	
	22		B.	2.23	3.23	4.18	5.09	7.80						
	23	θ^1 Ceti	C	25.31	26.28	27.14	28.09	28.93	17 27.20	0.14	18.14	1 17 8.91	7.35	
	24		D.	46.61	49.43	50.40	51.21	52.03						
	25	Lacaille, 416	D.	56.51	59.61	0.59	1.51	2.42	22 0.13	25.00	18.15	1 21 6.98	7.19	
	26	Lacaille, 435	C.	44.14	45.13	46.14	47.22	48.19	25 46.16	0.17	18.15	1 25 27.85	7.14	
	27	B. A. C., 479	C.	50.47	51.60	52.63	54.68	55.66	28 53.01	0.17	18.15	1 28 34.69	7.07	
	28	Lacaille, 477	C.	39.67	40.78	41.71	42.83	43.83	32 41.76	0.17	18.15	1 32 23.44	7.04	
	29	B. A. C., 527	C.	12.35	13.53	14.52	15.58	16.68	36 14.53	0.17	18.15	1 35 56.20	7.05	
	30		B.	55.20	56.30	57.28	58.11	0.86						
20	31	Rumker, 11970	C.	18.25	19.22	20.08	20.91	21.82	0 20.09	0.11	18.54	0 0 1.44	7.56	
	32		D.	39.47	42.20	43.05	43.89	44.73						
	33		B.	2.64	3.54	4.51	5.43	8.25						
	34	γ Pegasi	C.	26.14	27.09	27.96	28.90	29.80	6 28.01	— 0.11	18.54	0 6 9.35	7.58	
	35		D.	47.80	50.63	51.62	52.52	53.34						
	36	Weisse, 229	B.	46.93	47.93	48.91	49.79	52.54	14 0.65	+ 11.34	18.54	0 13 53.45	7.59	
	37		C.	10.20	11.21	12.09	13.07	13.85						
	38	Weisse, 233	C.	22.39	23.28	24.13	24.98	25.88	14 35.62	— 11.57	18.54	0 14 5.50	7.59	
	39		D.	43.78	46.60	47.53	48.38	49.23						
	40		C.	18.07	18.95	19.87	20.81	21.61						
	41	12 Ceti	D.	39.18	41.85	42.87	43.65	44.52	23 42.35	22.60	18.54	0 23 1.21	7.55	
	42		E.	1.95	2.88	5.47	6.37	7.23						
	43	B. A. C., 137	D.	41.22	44.02	44.91	45.84	46.73	27 55.90	34.19	18.54	0 27 3.16	7.61	
	44		E.	4.38	5.34	7.98	8.81	9.75						
	45		B.	24.77	25.80	26.69	27.62	30.23						
	46	Weisse, 641	C.	47.73	48.68	49.55	50.51	51.41	37 49.59	0.12	18.55	0 37 30.93	7.51	
	47		D.	8.87	11.64	12.59	13.49	14.28						
	48		C.	49.65	50.67	51.51	52.46	53.27						
	49	δ Piscium	D.	10.73	13.59	14.48	15.41	16.21	42 14.07	— 22.68	—18.55	0 41 32.83	— 7.59	
	50		E.	33.81	34.64	37.31	38.21	39.04						

8. Steady.
Sept. 19. 1*h.* 40*m.* Image east 0.02. Clamp west. Night fine; stars steady.
Azimuth cor., Sept. 20, from Polaris and ε Piscium.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
Sept. 20, 0.7	— 18.55	— 0.010	— 0.060	+ 0.009	— 0.055

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DATE.	Number.	OBJECT.	Set	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
	1		B.	24.38	25.88	27.58	29.50	34.66						
Sept. 20	2	υ^1 Cassiopeæ	C.	7.55	9.29	10.91	12.65	14.36	47 10.97	— 0.16	—18.55	0 46 52.26	— 9.27	Y.
	3		D.	47.41	52.38	54.37	56.08	57.61						
	4		C.	5.19	6.09	6.99	7.89	8.71						
	5	ε Piscium	D.	26.36	29.13	30.08	30.91	31.71	56 29.59	— 22.69	18.55	0 55 48.34	7.59	
	6		E.	49.36	50.24	52.91	53.71	54.51						
	†7	Weisse, 1076	B.	4.86	5.78	6.74	7.56	10.34	1 18.47	+ 11.27	18.55	1 1 11.19	7.63	
	†8		C.	28.10	29.01	29.83	30.75	31.71						
	†9	Weisse, 1079	C.	35.42	36.39	37.31	38.24	39.11	1 48.73	— 11.50	18.55	1 1 18.68	7.63	
	†10		D.	56.84	59.70	0.60	1.44	2.29						
	11	Polaris	C.	32.00	9.00	43.00	20.00	54.00	9 43.60	- -	- -	- - - -	- -	
	12		B.	0.67	1.66	2.61	3.57	6.39						
	13	η Piscium	C.	24.29	25.26	26.13	27.07	27.96	24 26.15	0.11	18.55	1 24 7.49	7.73	
	14		D.	45.91	48.86	49.76	50.68	51.50						
	15		B.	44.68	45.75	46.54	47.39	50.12						
22	16	ξ^2 Ceti	C.	7.58	8.51	9.38	10.26	11.06	21 9.42	0.09	18.64	2 21 50.69	7.56	
	17		D.	28.76	31.47	32.46	33.26	34.11						
	18	27 Arietis	D.	55.30	58.37	- -	0.02	0.92	24 10.66	35.45	18.64	2 23 16.57	7.84	
	19		E.	19.29	- -	22.91	23.77	24.68						
	20		B.	29.13	30.13	- -	32.07	35.21						
	21	μ Arietis	C.	53.44	54.43	55.34	56.33	57.27	34 55.37	0.09	18.63	2 34 36.65	8.00	
	22		D.	15.39	18.58	19.54	20.58	21.52						
	23	Lacaille, 900	C.	49.31	50.42	51.39	52.29	53.20	45 51.32	0.11	18.63	2 45 32.58	6.39	
	24	Lacaille, 918	C.	6.71	7.77	8.84	9.83	10.92	49 8.81	0.11	18.63	2 48 50.07	6.34	
	25		B.	2.58	3.68	4.73	5.60	8.68						
	26	Moon's 2d Limb	C.	27.51	28.60	29.61	30.57	31.50	54 29.85	0.39	18.62	2 54 10.84	- -	
	27		D.	- -	53.47	54.46	55.44	56.41						
	28		B.	38.42	39.33	40.25	41.11	43.85						
	29	δ Arietis	C.	2.43	3.46	4.41	5.36	6.23	4 4.39	0.09	18.62	3 3 45.68	7.92	
	30		D.	24.74	27.64	28.61	29.58	30.50						
	31		B.	52.11	53.10	53.98	54.88	57.78						
	32	ζ Arietis	C.	16.31	17.34	18.27	19.21	20.10	7 18.30	0.09	18.62	3 6 59.59	7.95	
	33		D.	38.65	41.77	42.77	43.71	44.57						
	34		C.	33.82	34.85	35.71	36.66	37.51						
	35	τ^1 Arietis	D.	56.27	58.97	0.00	- -	1.78	13 59.41	23.86	18.61	3 13 16.93	7.80	
	36		E.	20.53	21.43	- -	25.13	25.95						
	37		B.	33.89	34.87	35.88	36.81	39.97						
	38	17 Tauri	C.	58.86	59.78	0.68	1.67	2.61	37 0.75	0.09	18.60	3 36 42.05	8.07	
	39		D.	21.69	24.81	25.71	26.56	27.51						
	40	B. A. C., 1164	C.	26.86	27.79	28.68	29.60	30.61	39 28.71	0.10	18.60	3 39 10.01	8.06	
	41		B.	9.85	10.88	11.80	12.80	15.72						
	42	η Tauri	C.	34.73	35.83	36.81	37.70	38.69	39 36.75	0.09	18.60	3 39 18.05	8.06	
	43		D.	57.74	0.68	1.69	2.69	3.65						
	44		B.	32.35	33.41	34.40	35.45	38.47						
23	45	32 Vulpeculæ	C.	57.99	59.18	0.09	1.16	2.13	48 0.12	0.10	18.34	20 48 41.68	6.13	
	46		D.	21.64	24.78	25.89	26.92	27.90						
	47	✪ (7) —22° 53′	D.	38.81	41.94	42.92	43.87	44.75	0 42.46	24.48	18.36	20 59 59.63	8.13	
	48	✪ (7.8) —23° 0′	C.	19.57	20.50	21.49	22.51	23.40	2 21.49	0.14	18.36	21 2 2.99	8.14	
	49	B. A. C., 7347	C.	50.88	51.91	52.79	53.79	54.72	2 52.82	— 0.14	—18.36	21 2 34.32	— 8.14	

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
Sept. 22, 3.0	— 18.62	+ 0.028	— 0.039	+ 0.009	— 0.055

7–8 & 9–10. Second not recorded on fillet.

Sept. 20. 1*h.* 40*m.* Image east *r.* 0.02. Clamp west.
22. 3*h.* 50*m.* Image 0.00. Clamp west.

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
	1		B.	55.10	56.12	57.12	58.24	1.41						
Sept. 23	2	ξ Cygni	C.	21.28	22.35	23.41	24.41	25.36	7 23.39	— 0.10	—18.37	21 7 4.92	— 6.21	Y.
	3		D.	45.52	48.70	49.65	50.67	51.55						
	4		B.	44.94	46.78	49.11	50.71	56.85						
	5	α Cephei	C.	33.18	35.29	37.23	39.19	41.08	15 37.34	0.11	18.38	21 15 18.85	4.72	
	6		D.	18.09	24.13	26.00	27.90	29.65						
	7		B.	0.97	3.90	6.43	9.09	16.87						
	8	β Cephei	C.	7.62	10.42	12.43	15.88	18.30	23 12.99	0.12	18.40	21 23 54.46	4.17	
	9		D.	8.90	17.08	19.51	22.16	25.26						
	10	ι Piscis Australis	C.	0.89	1.95	2.91	4.11	5.16	37 3.00	0.16	18.42	21 36 44.43	8.69	
	11	Lacaille, 8918	C.	0.01	1.12	2.07	3.00	4.06	39 2.05	0.15	18.42	21 38 43.48	8.39	
	12	Lacaille, 8941	C.	50.88	51.96	52.94	53.88	54.87	43 52.91	0.14	18.43	21 43 34.33	8.18	
	13	Lacaille, 8965	C.	10.25	11.55	12.55	13.50	14.51	48 12.47	0.15	18.44	21 47 53.88	8.52	
	14	Lacaille, 8981	C.	51.20	52.29	53.33	54.33	55.27	51 53.28	0.15	18.45	21 51 34.69	8.44	
	15	Lacaille, 9000	C.	47.64	48.77	49.78	50.79	51.81	54 49.76	0.15	18.45	21 54 31.15	8.59	
	16		B.	36.80	37.68	38.63	39.51	42.28						
	17	α Aquarii	C.	59.61	0.51	1.45	2.37	3.16	59 1.47	0.12	18.46	21 58 42.89	7.41	
	18		D.	20.80	23.48	24.40	25.26	26.07						
	19	B. A. C., 7729	C.	55.72	56.75	57.80	58.74	59.78	3 57.76	0.15	18.47	22 3 39.14	8.33	
	20		C.	51.13	51.99	52.82	53.69	54.67						
	21	θ Aquarii	D.	12.26	15.06	15.89	16.80	17.76	10 15.50	22.78	18.48	22 9 34.24	7.65	
	22		E.	35.30	36.11	38.83	39.70	40.50						
	23		B.	51.11	51.89	52.78	53.74	56.54						
	24	ρ Aquarii	C.	14.10	14.98	15.88	16.83	17.65	13 15.95	0.12	18.49	22 12 57.34	7.64	
	25		D.	35.43	38.27	39.16	40.01	40.91						
	26	Lacaille, 9127	C.	20.81	21.83	22.77	23.78	24.74	17 22.79	0.15	18.49	22 17 4.14	8.28	
	27	Lacaille, 9144	C.	58.81	59.78	0.74	1.78	2.78	22 0.78	0.15	18.50	22 21 42.13	8.34	
	28	Lacaille, 9169	C.	6.55	7.22	8.31	9.31	10.38	26 8.35	0.15	18.51	22 25 49.69	8.38	
	29		C.	52.82	53.71	54.71	55.56	56.42						
	30	ζ Pegasi	D.	14.12	16.98	17.89	18.76	19.59	35 17.40	22.87	18.52	22 34 36.01	7.30	
	31		E.	37.13	38.11	40.85	41.71	42.67						
	32		B.	37.93	38.93	39.91	40.82	43.78						
	33	δ Arietis	C.	2.23	3.29	4.21	5.16	5.92	4 4.09	0.11	18.34	3 3 45.64	7.94	
	34		D.	24.40	27.31	28.26	29.12	30.07						
	35		B.	51.85	52.71	53.65	54.66	57.63						
	36	ζ Arietis	C.	16.14	17.06	17.90	18.80	19.76	7 17.99	0.11	18.34	3 6 59.55	7.97	
	37		D.	38.28	41.33	42.39	43.36	44.37						
	38		B.	17.86	18.87	19.76	20.77	23.48						
	39	g^1 Astrea, +8° 45′	C.	41.11	42.04	42.86	43.71	44.59	14 42.84	0.11	18.34	3 14 24.39	7.49	
	40		D.	2.10	5.07	5.89	6.84	7.71						
	41		C.	21.70	22.48	23.27	24.13	24.98						
	42	Weisse, 306	D.	42.94	45.86	46.71	47.70	48.61	18 46.30	23.12	18.34	3 18 4.84	7.65	
	43		E.	6.38	7.29	9.93	10.78	11.72						
	44	Groombridge, 698	D.	38.07	42.09	43.31	44.27	45.30	23 57.65	45.52	18.34	3 22 53.80	9.29	
	45		E.	8.90	10.22	13.67	14.76	15.96						
	46		B.	33.61	34.48	35.45	36.51	39.52						
	†47	17 Tauri	C.	58.57	59.47	0.39	1.41	2.40	37 0.49	— 0.11	—18.34	3 36 42.04	— 8.09	
	48		D.	21.47	24.63	25.53	26.46	27.41						

38. Unsteady.

Sept. 23. 22*h*. 40*m*. Image 0.00 *r*. Clamp west.
23. Azimuth cor. from α Cephei, β Cephei, and α Aquarii.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m*.	*n*.	*c*.
h.	s.	s.	s.	s.	s.
Sept. 23, 21.7	— 18.43	— 0.107	— 0.063	+ 0.038	— 0.055
3.8	— 18.34	0.000	- -	- -	- -

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
	1		C.	34.51	35.56	36.52	37.49	38.52						
Sept. 23	2	η Tauri	D.	57.60	0.60	1.50	2.37	3.30	40 1.07	— 24.57	—18.34	3 39 18.17	— 8.09	Y.
	3		E.	22.49	23.49	26.43	27.37	28.30						
	4		B.	42.08	43.11	44.18	44.85	47.78						
	5	Moon's 2d Limb	C.	7.48	8.42	9.29	10.18	11.03	46 9.34	0.11	18.34	3 45 50.89	- -	
	6		D.	30.69	33.78	34.80	35.72	36.68						
	7		B.	29.67	30.55	31.51	32.41	35.45						
	8	γ^1 Eridani	C.	53.10	54.11	55.07	55.89	56.76	51 54.95	0.13	18.34	3 51 36.49	6.48	
	9		D.	14.63	17.46	18.33	19.26	20.08						
	10		B.	25.25	26.28	27.27	28.22	31.29						
	11	A^1 Tauri	C.	49.87	50.87	51.71	52.68	53.56	56 51.78	0.11	18.34	3 56 33.34	7.97	
	12		D.	12.53	15.35	16.40	17.26	18.20						
	13		B.	2.26	3.16	4.00	4.92	7.82						
	14	O^1 Eridani	C.	25.36	26.17	27.20	28.12	28.88	5 27.10	0.12	18.34	4 5 8.64	6.66	
	15		D.	46.50	49.21	50.14	50.93	51.86						
	16		B.	50.49	51.40	52.42	53.22	55.95						
	17	γ Tauri	C.	13.88	14.76	15.64	16.56	17.51	12 15.81	0.11	18.34	4 11 57.37	7.61	
	18		D.	35.85	38.51	39.43	40.33	41.23						
	19		B.	26.80	27.81	28.89	29.80	32.51						
	20	ε Tauri	C.	51.08	52.11	52.86	53.69	54.66	20 52.89	0.10	18.34	4 20 34.44	7.76	
	21		D.	13.08	16.16	17.07	17.92	18.89						
	22		B.	33.67	34.45	35.45	36.47	39.55						
24	23	17 Tauri	C.	58.52	59.66	0.60	1.60	2.39	37 0.48	0.13	18.22	3 36 42.14	8.13	
	24		D.	21.44	24.50	25.41	26.32	27.25						
	25		B.	1.60	2.66	3.57	4.41	7.51						
	26	B. A. C., 1164	C.	26.62	27.52	28.46	29.43	30.33	39 28.47	0.13	18.22	3 39 10.13	8.12	
	27		D.	49.50	52.45	53.40	54.38	55.23						
	28		B.	9.62	10.60	11.58	12.49	15.52						
	29	η Tauri	C.	34.36	35.33	36.32	37.36	38.30	39 36.44	0.13	18.22	3 39 18.10	8.12	
	30		D.	57.39	0.51	1.47	2.47	3.36						
	31		B.	11.54	12.44	13.45	14.38	17.27						
	32	Lalande, 7069	C.	34.62	35.54	36.49	37.36	38.30	42 36.53	0.13	18.22	3 42 18.18	7.45	
	33		D.	56.09	58.66	59.61	0.68	1.48						
	†34	Lacaille, 1271	D.	38.66	41.76	42.67	43.60	44.43	48 42.22	24.61	18.21	3 47 59.40	6.15	
	35	Lacaille, 1291	D.	18.53	21.79	22.86	23.89	24.99	51 22.41	26.08	18.21	3 50 38.12	5.85	
	36	B. A. C., 1250	C.	27.48	28.65	29.70	30.86	31.80	55 29.70	0.17	18.21	3 55 11.32	5.75	
	37	46 Tauri	D.	45.94	48.77	49.62	50.51	51.32	7 0.50	34.02	18.20	4 6 8.27	7.29	
	38		E.	8.93	9.80	12.51	13.37	14.22						
	39		B.	50.31	51.27	52.23	53.07	55.99						
	40	γ Tauri	C.	13.90	14.96	15.79	16.76	17.63	12 15.78	0.13	18.20	4 11 57.45	7.64	
	41		D.	35.59	38.44	39.41	40.24	41.12						
	42		B.	26.86	27.89	28.89	29.80	32.87						
	43	ε Tauri	C.	50.88	51.94	52.83	53.74	54.77	20 52.87	0.13	18.20	4 20 34.55	7.79	
	44		D.	13.06	15.97	16.97	17.81	18.81						
	45		B.	52.56	53.52	54.36	55.13	58.18						
	46	B. A. C., 1402	C.	16.24	17.19	18.09	19.07	19.96	24 18.09	0.13	18.19	4 23 59.76	7.61	
	47		D.	37.97	40.91	41.79	42.71	43.62						
	48		B.	50.18	51.28	52.30	53.25	56.35						
	49	τ Tauri	C.	15.09	15.93	16.97	17.96	18.95	34 17.00	— 0.13	—18.19	4 33 58.68	— 7.94	
	50		D.	37.84	40.78	41.79	42.70	43.63						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
Sept. 24, 5.0	— 18.17	+ 0.031	— 0.083	+ 0.038	— 0.055

34. Seconds not recorded on fillet.

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R Ascension.	Reduct'n to 1860.0.	Observer
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
	1		B.	13.24	14.34	15.33	16.31	19.40						
Sept. 24	2	Moon's 2d Limb	C.	38.93	39.97	40.87	41.81	42.80	39 40.90	— 0.13	—18.19	4 39 22.59	- -	Y.
	3		D.	2.32	5.58	6.54	7.56	8.51						
	4		B.	11.22	12.31	13.22	14.09	17.19						
	5	*i* Tauri	C.	35.30	36.27	37.22	38.23	39.08	43 37.24	0.13	18.18	4 43 18.93	— 7.69	
	6		D.	57.47	0.38	1.31	2.23	3.12						
	7	*k* Tauri	E.	48.09	49.06	51.82	52.86	53.83	50 51.13	49.48	18.18	4 49 43.47	8.01	
	8		B.	43.46	44.46	45.48	46.40	49.37						
	9	ι Tauri	C.	7.87	8.82	9.81	10.68	11.60	55 9.86	0.13	18.18	4 54 51.56	7.80	
	10		D.	30.48	33.52	34.45	35.31	36.20						
	11		B.	29.40	30.48	31.42	32.43	35.34						
	12	ε Leporis	C.	54.09	54.93	55.91	56.97	57.93	59 56.06	0.16	18.18	4 59 37.72	5.65	
	13		D.	16.94	19.82	20.81	21.76	22.62						
	14		B.	13.77	15.00	16.46	17.61	21.50						
	†15	α Aurigæ	C.	46.49	47.82	49.09	50.38	51.58	6 48.98	0.12	18.17	5 6 30.69	9.58	
	16		D.	16.38	20.35	21.57	22.87	23.86						
	17		B.	19.44	20.57	21.50	22.54	25.92						
	18	*o* Columbæ	C.	46.92	47.97	48.98	50.12	51.32	12 49.29	0.18	18.17	5 12 30.94	4.86	
	19		D.	12.83	16.30	17.35	18.36	19.20						
	20		B.	5.95	6.93	8.13	9.17	12.55						
	21	B. A. C., 1673	C.	33.62	34.69	35.81	37.06	38.12	16 35.89	0.18	18.17	5 16 17.54	4.85	
	22		D.	59.41	2.68	3.70	4.78	5.72						
	23	Lacaille, 1840	C.	8.41	9.46	10.37	11.46	12.56	21 10.45	0.17	18.16	5 20 52.11	4.94	
	24		B.	51.66	52.53	53.47	54.29	56.98						
	25	δ Orionis	C.	14.49	15.33	16.14	17.12	17.91	25 16.18	0.14	18.16	5 24 57.88	6.56	
	26		D.	35.13	38.13	38.99	39.87	40.71						
	27		B.	6.85	7.86	8.78	9.67	12.28						
	28	ε Orionis	C.	29.51	30.46	31.28	32.22	33.11	29 31.41	0.14	18.16	5 29 13.11	6.49	
	29		D.	50.62	53.34	54.21	55.06	55.85						
	30	Lacaille, 1936	C.	0.25	1.33	2.25	3.30	4.32	35 2.29	0.17	18.16	5 34 43.96	4.82	
	31	B. A. C., 1817	C.	28.42	29.52	30.50	31.60	32.58	38 30.52	0.18	18.16	5 38 12.19	4.76	
	32	Lacaille, 1990	C.	57.86	58.91	59.86	0.83	1.87	41 59.87	0.17	18.15	5 41 41.54	5.01	
	33	λ Columbæ	E.	15.43	16.41	19.82	20.78	21.81	49 18.85	54.10	18.15	5 48 6.60	4.62	
	34	γ Columbæ	C.	55.13	56.11	57.24	58.26	59.40	52 57.23	0.18	18.15	5 52 38.90	4.51	
	35	B. A. C., 1941	C.	32.49	33.60	34.61	35.72	36.79	56 34.64	0.18	18.15	5 56 16.32	4.60	
	36		C.	53.16	54.23	55.07	55.98	56.96						
	37	μ Geminorum	D.	15.78	18.91	19.90	20.76	21.70	15 19.40	24.39	18.14	6 14 36.86	7.47	
	38		E.	40.61	41.53	44.52	45.47	46.36						
	39		B.	21.01	21.90	22.90	23.89	26.94						
25	40	B. A. C., 7139	C.	47.05	47.98	48.92	49.92	50.91	32 48.98	0.20	18.17	20 32 30.62	8.42	
	41		D.	10.96	14.11	15.08	16.09	17.11						
	42		C.	29.81	30.66	31.51	32.42	33.33						
	43	ε Aquarii	D.	51.10	53.84	54.77	55.62	56.46	40 54.31	22.93	18.18	20 40 13.21	7.49	
	44		E.	14.19	15.11	17.72	18.61	19.55						
	45	ω Capricorni	C.	52.39	53.37	54.32	55.37	56.33	43 54.36	0.20	18.18	20 43 35.98	8.34	
	46		B.	32.17	33.32	34.24	35.27	38.27						
	47	32 Vulpeculæ	C.	57.90	58.96	0.07	1.04	1.87	48 59.98	0.16	18.18	20 48 41.64	6.11	
	48		D.	21.62	24.73	25.78	26.76	27.66						
	49		B.	8.40	9.67	10.92	12.20	15.91						
	50	B. A. C., 7290	C.	40.08	41.32	42.51	43.81	45.05	53 42.57	— 0.15	—18.19	20 53 24.23	— 5.46	
	51		D.	9.21	13.04	14.30	15.43	16.71						

15. Unsteady.

Sept. 24. 6*h*. 20*m*. Image east 0.02 *r*. Clamp west.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m*.	*n*.	*c*.
h.	s.	s.	s.	s.	s.
Sept. 25, 21.7	— 18.23	— 0.053	— 0.114	+ 0.038	— 0.055
5.7	— 18.13	+ 0.049	- -	- -	- -

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
Sept. 25	1	* (7) +43° 52′	D.	34.29	38.00	39.37	40.41	41.61	54 54.19	— 46.77	—18.19	20 53 49.24	— 5.44	Y.
	2		E.	5.71	6.94	10.76	11.77	13.06						
	3	61¹ Cygni	C.	59.64	0.83	1.86	3.07	4.12	1 30.43	28.60	18.19	21 0 43.64	6.39	
	4		E.	55.31	56.45	59.95	0.96	2.13						
	5	61² Cygni	D.	27.70	31.34	32.41	33.60	34.71	1 31.95	28.63	18.19	21 0 45.12	6.40	
	6	Lacaille, 8736	C.	0.93	2.04	2.94	4.09	5.03	6 3.01	0.20	18.20	21 5 44.60	8.50	
	7	4 Piscis Australis	C.	51.28	52.43	53.41	54.49	55.46	9 53.41	— 0.21	18.20	21 9 35.01	8.66	
	8	B. A. C., 3199, S. P.	B.	14.54	8.71	2.08	56.10	36.48	17 19.93	+ 0.01	18.21	9 17 1.73	13.21	
	9		C.	32.95	26.55	20.04	13.23	7.71						
	10		D.	3.44	44.30	37.08	30.88	24.90						
	11	β Aquarii	B.	12.31	13.32	14.23	15.09	17.80	24 25.77	+ 11.10	18.21	21 24 18.66	7.48	
	12		C.	35.24	36.15	36.98	37.89	38.74						
	13	Lacaille, 8870	D.	46.61	49.63	50.69	51.67	52.54	31 50.23	— 25.58	18.22	21 31 6.43	8.37	
	14	* (7) —33° 9′	E.	35.18	36.34	39.63	40.61	41.50	34 38.65	53.70	18.22	21 33 26.72	8.64	
	15	Lacaille, 8889	E.	9.47	10.45	13.79	14.71	15.71	35 12.83	53.69	18.22	21 34 0.91	8.64	
	16	Lacaille, 8911	D.	54.72	58.00	59.11	0.17	1.18	38 58.64	27.05	18.23	21 38 13.36	8.64	
	17	Lacaille, 8934	C.	13.82	14.88	15.82	16.76	17.71	42 15.80	0.20	18.23	21 41 57.37	8.36	
	18	Lacaille, 8965	C.	10.10	11.18	12.11	13.26	14.30	48 12.19	0.20	18.24	21 47 53.75	8.51	
	19	Lacaille, 8981	C.	51.11	52.06	53.09	54.19	55.11	51 53.11	0.20	18.24	21 51 34.67	8.42	
	20	Lacaille, 9000	C.	47.57	48.67	49.67	50.61	51.56	54 49.62	0.21	18.24	21 54 31.17	8.57	
	21	13 Piscis Australis	E.	34.75	35.73	38.88	39.83	40.78	57 37.99	52.24	18.24	21 56 27.51	8.47	
	22	Lacaille, 9036	C	9.40	10.43	11.43	12.51	13.51	2 11.46	0.21	18.25	22 1 53.00	8.65	
	23	B. A. C., 7739	C.	6.22	7.18	8.21	9.22	10.10	5 8.19	0.20	18.25	22 4 49.74	8.31	
	24	θ Aquarii	B.	27.84	28.75	29.69	30.54	33.34	9 52.64	0.17	18.25	22 9 34.21	7.65	
	25		C.	50.80	51.78	52.66	53.50	54.30						
	26		D.	11.96	14.81	15.66	16.53	17.46						
	27	ρ Aquarii	B.	50.94	51.88	52.85	53.67	56.48	13 15.83	0.17	18.26	22 12 57.40	7.64	
	28		C.	13.91	14.90	15.80	16.77	17.58						
	29		D.	35.17	38.07	39.00	39.81	40.66						
	30	Lacaille, 9130	C.	40.16	41.27	42.27	43.25	44.19	18 42.23	0.20	18.26	22 18 23.77	8.36	
	31	Lacaille, 9144	C.	58.62	59.61	0.62	1.69	2.63	21 0.63	0.20	18.26	22 20 42.17	8.33	
	32	Lacaille, 9169	C.	6.19	7.22	8.19	9.22	10.17	26 8.20	0.20	18.27	22 25 49.73	8.36	
	33	Lacaille, 9190	C.	30.10	31.18	32.20	33.28	34.37	30 32.23	0.21	18.27	22 30 13.75	8.51	
	34	ζ Pegasi	B.	29.51	30.37	31.28	32.18	35.06	34 54.46	0.16	18.28	22 34 36.02	7.29	
	35		C.	52.61	53.61	54.52	55.38	56.19						
	36		D.	13.91	16.75	17.62	18.51	19.44						
	37	μ Eridani	B.	30.60	31.53	32.41	33.36	36.08	38 55.30	— 0.17	18.18	4 38 36.95	6.79	
	38		C.	53.49	54.46	55.31	56.21	57.16						
	39		D.	14.46	17.29	18.18	19.11	19.90						
	†40	ι Tauri	B.	43.52	44.53	45.43	46.37	49.45	54 57.85	+ 11.88	18.17	4 54 51.56	7.83	
	†41		C.	7.94	8.89	9.83	10.81	11.71						
	42	δ Orionis	A.	28.72	29.70	30.66	33.31	34.28	25 16.18	— 0.14	—18.15	5 24 57.90	— 6.60	
	43		B.	51.62	52.56	53.41	54.35	57.08						
	†44		C.	14.35	15.31	16.15	17.06	17.89						
	45		D.	35.47	38.11	39.00	39.85	40.72						
	46		E.	58.14	59.10	1.77	2.59	3.42						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
Sept. 25, 5.7	—18.13	+ 0.049	— 0.114	+ 0.038	— 0.055

40–41. Through clouds.
44 Through clouds. *r.*
Sept. 25. 22*h.* 55*m.* Image east 0.04. Clamp west. Stars unsteady.

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
	1		B.	6.92	7.89	8.74	9.61	12.31						
Sept. 25	2	ε Orionis	C.	29.68	30.61	31.46	32.37	33.23	29 31.49	— 0.17	—18.14	5 29 13.18	— 6.53	Y.
	3		D.	50.62	53.43	54.33	55.17	56.05						
	† 4	Moon's 2d Limb	A.	41.91	42.92	43.89	- -	- -	34 21.75	+ 13.45	18.14	5 34 17.06	- -	
	† 5		D.	56.93	59.98	0.99	1.97	3.07						
	6		A.	40.74	41.71	42.70	45.56	46.57						
	7		B.	5.16	6.09	7.07	7.98	10.96						
	8	χ^1 Orionis	C.	29.55	30.39	31.34	32.22	33.16	46 31.29	— 0.12	18.13	5 46 13.04	7.55	
	9		D.	51.71	54.65	55.63	56.59	57.45						
	10		E.	16.08	17.00	19 79	20.71	21.56						
	11		A.	59.89	0.83	1.83	4.85	5.87						
	†12	η Geminorum	B.	24.72	25.69	26.64	27.63	30.57	6 27.03	+ 24.16	18.11	6 6 33.07	7.53	
	13		C.	49.49	50.46	51.39	52.32	53.22						
	14	μ Geminorum	C.	53.23	54.22	55.18	56.10	57.08	14 55.16	— 0.16	18.10	6 14 36.90	7.50	
	15		B.	13.11	14.08	14.98	15.86	18.76						
28	16	ω Aquilæ	C	36.39	37.37	38.22	39.11	39.96	11 38.23	0.11	17.41	19 11 20.70	6.10	
	17		D.	57.84	0.59	1.52	2.42	3.30						
	18		C.	48.61	49.49	50.37	51.26	52.15						
	19	δ Aquilæ	D.	9.48	12.35	13.22	14.14	14.91	19 12.83	22.55	17.40	19 18 32.87	6.55	
	20		E.	32.51	33.40	35.94	36.84	37.76						
	21		B.	21.36	22.34	23.28	24.24	27.33						
	22	✡ (9) —27° 21′	C.	47.00	47.93	48.92	50.07	51.10	24 49.01	0.14	17.39	19 24 31.47	8.10	
	23		D.	10.76	13.87	14.71	15.63	16.59						
	24	✡ (9) —27° 20′	C.	40.73	41.81	42.82	43.78	44.74	25 42.78	0.15	17.39	19 25 25.24	8.10	
	25	* (9) —27° 20′	C.	9.20	10.21	11.20	12.12	13.14	26 11.17	0.15	17.39	19 25 53.63	8.10	
	26	✡ (9) —27° 20′	C.	17.11	18.08	19.14	20.10	21.13	26 19.11	0.15	17.39	19 26 1.57	8.10	
	27		B.	25.47	26.33	27.20	28.07	30.76						
	28	β Aquilæ	C.	48.32	49.30	50.14	51.00	51.85	48 50.12	0.12	17.36	19 48 32.64	6.55	
	29		D.	9.38	12.09	13.09	13.93	14.82						
	30	B. A. C., 6888	D.	26.32	29.48	30.53	31.49	32.44	57 30.05	25.36	17.34	19 56 47.35	— 8.20	
	31	λ Ursæ Minoris	C.	4.00	53.00	37.00	25.00	10.00	2 37.80	0.19	17.33	20 2 20.28	+ 94.17	
	32	Lacaille, 8399	C.	43.56	44.63	45.68	46.75	47.83	10 45.69	0.16	17.32	20 10 28.21	— 8.61	
	33	Lacaille, 8418	C.	23.47	24.59	25.51	26.55	27.56	14 25.54	0.16	17.31	20 14 8.06	8.80	
	34	Lacaille, 8432	C.	27.59	28.67	29.77	30.70	31.78	17 29.70	0.16	17.31	20 17 12.23	8.68	
	35	Lacaille, 8471	C.	14.72	15.70	16.71	17.80	18.71	24 16.73	0.15	17.30	20 23 59.28	8.54	
	36	Lacaille, 8496	C.	51.58	52.63	53.61	54.61	55.60	27 53.61	0.15	17.29	20 27 36.17	8.27	
	37	Lacaille, 8517	C.	56.24	57.36	58.41	59.48	0.44	31 58.39	0.16	17.29	20 31 40.94	8.69	
	38	Lacaille, 8537	C.	7.97	9.08	10.03	11.06	11.94	35 10.02	0.15	17.28	20 34 52.58	8.44	
	39	B. A. C., 7181	C.	27.91	28.98	29.94	31.00	31.94	38 29.95	0.15	17.28	20 38 12.53	8.30	
	40	Lacaille, 8594	C.	33.06	34.20	35.20	36.27	37.18	43 35.18	— 0.15	17.27	20 43 17.76	8.47	
	41	Lacaille, 8619	B.	10.91	11.96	12.98	13.89	17.33	47 13.41	+ 26.39	17.26	20 47 22.54	8.58	
	42	* (7) —32° 5′	C.	42.71	43.71	44.70	45.71	46.80	47 44.73	— 0.15	17.26	20 47 27.31	8.58	
	43	Lacaille, 8632	C.	17.26	18.38	19.36	20.42	21.48	52 19.38	0.16	17.25	20 52 1.97	8.83	
	44	Lacaille, 8658	D.	19.21	22.19	23.26	24.26	25.24	55 22.83	25.95	17.25	20 54 39.63	8.44	
	45	δ Miscroscopii	C.	57.32	58.28	59.32	0.26	1.19	57 59.27	0.15	17.25	20 57 41.88	8.52	
	46	Lacaille, 8701	D.	24.29	27.47	28.52	29.53	30.50	1 28.06	25.79	17.24	21 0 45.03	8.41	
	47	3 Piscis Australis	C.	22.37	23.41	24.41	25.49	26.50	5 24.44	— 0.15	—17.23	21 5 7.06	— 8.38	

4–5. Through clouds.
12. Through clouds.

Sept. 28. 22*h*. 35*m*. Image 0.02 *r*. east. Clamp west.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m*.	*n*.	*c*.
h.	s.	s.	s.	s.	s.
Sept. 28, 20.8	— 17.26	+ 0.096	— 0.083	+0.038	— 0.038

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s	m. s.	s.	h. m. s.	s.	
Sept. 28	1	Lacaille, 8758	E.	15.15	16.12	19.43	20.48	21.42	10 18.52	— 52.59	—17.23	21 9 8.70	— 8.54	Y.
	2	Lacaille, 8787	D.	17.48	20.91	21.97	22.93	23.95	14 21.45	25.97	17.22	21 13 38.25	8.45	
	3	Lacaille, 8804	D.	30.56	34.07	35.12	36.17	37.23	17 34.63	27.67	17.21	21 16 49.74	8.78	
	4	B. A. C., 7467	C.	44.00	44.99	45.95	47.08	47.91	22 45.99	0.15	17.21	21 22 28.63	8.24	
	5	Lacaille, 8849	C.	0.61	1.63	2.71	3.80	4.78	27 2.71	0.15	17.20	21 26 45.36	8.47	
	6	Lacaille, 8867	C.	4.21	5.29	6.32	7.33	8.41	31 6.31	0.16	17.19	21 30 48.96	8.69	
	7	✲ (6.7) —33° 8′	C.	41.92	43.11	44.00	45.00	46.07	33 44.02	0.16	17.19	21 33 26.68	8.62	
	8	Lacaille, 8889	C.	15.91	16.95	18.07	19.09	20.10	34 18.02	0.16	17.19	21 34 0.68	8.62	
	9	Lacaille, 8906	C.	46.63	47.72	48.68	49.68	50.71	37 48.68	0.15	17.18	21 37 31.35	8.42	
	10	Lacaille, 8923	C.	31.14	32.10	33.07	34.03	35.06	40 33.08	0.15	17.18	21 40 15.76	8.27	
	11	Lacaille, 8941	D.	12.51	15.54	16.61	17.51	18.46	44 16.13	24.67	17.17	21 43 34.29	8.16	
	12	Lacaille, 8965	D.	33.47	36.78	37.77	38.70	39.77	48 37.30	26.38	17.16	21 47 53.76	8.49	
	13	Lacaille, 8981	D.	14.06	17.22	18.21	19.14	20.12	52 17.75	25.96	17.16	21 51 34.63	8.41	
	14	Lacaille, 9003	D.	29.07	31.93	33.08	34.04	34.93	55 32.61	25.56	17.15	21 54 49.90	8.33	
	15		B.	35.47	36.38	37.26	38.18	41.00						
	16	α Aquarii	C.	58.30	59.30	0.18	1.10	1.90	59 0.13	0.12	17.15	21 58 42.86	7.40	
	17		D.	19.27	22.10	23.00	23.81	24.66						
	18	B. A. C., 7729	C.	54.32	55.39	56.41	57.51	58.43	3 56.41	0.15	17.14	22 3 39.12	8.31	
	19		B.	26.58	27.50	28.43	29.35	32.15						
	20	θ Aquarii	C.	49.57	50.59	51.48	52.43	53.30	9 51.48	0.13	17.13	22 9 34.23	7.64	
	21		D.	10.78	13.71	14.61	15.47	16.33						
	22		B.	49.63	50.60	51.56	52.46	55.36						
	23	ρ Aquarii	C.	12.88	13.80	14.71	15.57	16.41	13 14.64	0.13	17.13	22 12 57.38	7.64	
	24		D.	33.95	36.79	37.73	38.58	39.51						
	25	Lacaille, 9126	D.	35.41	38.41	39.40	40.41	41.33	17 38.99	24.70	17.12	22 16 57.17	8.13	
	26	Lacaille, 9135	D.	37.48	40.55	41.54	42.51	43.49	20 41.11	25.33	17.11	22 19 58.67	8.24	
	27	Lacaille, 9159	D.	53.48	56.68	57.72	58.81	59.81	23 57.30	26.51	17.11	22 23 13.68	8.42	
	28		B.	9.80	10.72	11.56	12.51	15.18						
	29	η Aquarii	C.	32.69	33.47	34.31	35.34	36.12	28 34.35	0.12	17.10	22 28 17.13	7.49	
	30		D.	53.52	56.19	57.16	57.92	58.83						
	31		C.	17.03	17.91	18.78	19.80	20.67						
30	32	ζ Aquilæ	D.	38.71	41.48	42.45	43.31	44.21	59 41.96	23.07	14.60	18 59 4.29	5.86	
	33		E.	1.99	3.06	5.77	6.71	7.51						
	34	Lacaille, 8045	D.	23.86	27.20	28.18	29.14	30.20	7 27.72	27.03	14.59	19 6 46.09	8.41	
	35		B.	10.33	11.13	12.11	13.00	15.82						
	36	ω Aquilæ	C.	33.41	34.31	35.19	36.17	37.09	11 35.31	0.01	14.59	19 11 20.71	6.06	
	37		D.	54.91	57.71	58.63	59.51	0.33						
	38		B.	22.74	23.56	24.40	25.40	27.95						
	39	δ Aquilæ	C.	45.53	46.49	47.37	48.27	49.15	18 47.35	0.02	14.58	19 18 32.75	6.52	
	40		D.	6.53	9.34	10.32	11.16	11.98						
	41	B. A. C., 6665	C.	6.58	7.59	8.60	9.61	10.49	21 8.57	0.05	14.57	19 20 53.95	8.28	
	42	Lacaille, 8143	C.	54.50	55.55	56.61	57.76	58.83	24 56.65	0.05	14.57	19 24 42.02	8.53	
	43	Lacaille, 8159	C.	55.46	56.56	57.56	58.72	59.71	27 57.60	0.05	14.57	19 27 42.98	8.44	
	44	B. A. C., 6716	C.	32.41	33.47	34.47	35.48	36.45	30 34.46	0.05	14.56	19 30 19.85	8.18	
	45	✲ (7.8) —25° 11′	C.	26.46	27.41	28.37	29.32	30.18	33 28.35	0.04	14.56	19 33 13.75	7.97	
	46	B. A. C., 6738	C.	13.23	14.23	15.26	16.19	17.13	34 15.21	— 0.04	—14.56	19 34 0.61	— 7.97	

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
Sept. 30, 20.5	— 14.49	+ 0.074	+ 0.020	+ 0.038	— 0.038

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
Sept. 30	1	B. A. C., 6755	C.	25.69	26.84	27.89	28.87	29.86	37 27.83	— 0.05	—14.55	19 37 13.22	— 8.42	Y.
	2	Lacaille, 8214	C.	59.87	0.97	1.90	2.86	3.90	38 1.90	0.05	14.55	19 37 47.30	8.42	
	3	✡ (6) —29° 17′	D.	11.78	15.01	16.09	17.14	18.10	41 15.62	25.73	14.55	19 40 35.34	8.24	
	4	Lacaille, 8249	D.	34.86	38.27	39.31	40.35	41.31	44 38.82	26.58	14.55	19 43 57.69	8.45	
	5	ω Sagittarii	D.	59.64	2.82	3.83	4.80	5.68	48 3.35	25.13	14.54	19 47 23.68	8.13	
	6	Lacaille, 8296	C.	39.42	40.61	41.72	42.71	43.76	51 41.64	0.05	14.54	19 51 27.05	8.59	
	7	c Sagittarii	C.	23.42	24.51	25.47	26.43	27.47	54 25.46	0.04	14.53	19 54 10.88	8.21	
	8	B. A. C., 6899	C	1.74	2.84	3.85	4.92	5.87	59 3.84	0.05	14.53	19 58 49.27	8.35	
	9	Lacaille, 8373	C.	4.08	5.20	6.19	7.37	8.39	5 6.25	0.05	14.52	20 4 51.67	8.66	
	10	B. A. C., 6948	C.	29.20	30.32	31.35	32.41	33.32	7 31.32	0.05	14.52	20 7 16.75	8.33	
	11	Lacaille, 8399	C.	40.82	41.91	42.86	43.88	45.05	10 42.90	0.05	14.51	20 10 28.34	8.58	
	†12	✡ (7.8) —29° 32′	C.	40.54	41.52	42.53	43.52	44.51	14 42.52	0.05	14.51	20 14 27.97	8.35	
	13	B. A. C., 7026	D.	41.85	45.16	46.15	47.14	48.23	18 45.71	25.89	14.51	20 18 5.31	8.37	
	14	Lacaille, 8466	C.	42.81	43.80	44.84	45.80	46.91	22 44.83	0.05	14.50	20 22 30.28	8.37	
	15	Lacaille, 8492	C.	29.73	30.75	31.69	32.77	33.87	26 31.76	0.05	14.49	20 26 17.22	8.46	
	16	B. A. C., 7108	C.	52.22	53.36	54.46	55.33	56.37	29 54.35	0.04	14.49	20 29 39.81	8.16	
	17	Lacaille, 8529	D.	27.96	31.23	32.31	33.34	34.21	33 31.81	26.51	14.49	20 32 50.81	8.54	
	18	B. A. C., 7168	C.	27.67	28.77	29.76	30.75	31.70	36 29.73	0.05	14.48	20 36 15.20	8.34	
	19	B. A. C., 7187	D.	42.61	45.90	46.88	47.87	48.81	39 46.41	25.19	14.48	20 39 6.74	8.25	
	20	Lacaille, 8587	C.	29.38	30.54	31.56	32.60	33.67	42 31.55	0.05	14.47	19 42 17.02	8.58	
	21	Lacaille, 8616	C.	3.10	4.24	5.27	6.18	7.11	46 5.18	0.05	14.47	20 45 50.66	8.34	
	22	Lacaille, 8658	D.	16.09	19.26	20.37	21.39	22.26	55 19.87	25.85	14.46	20 54 39.56	8.41	
	23	Lacaille, 8701	C.	57.45	58.55	59.51	0.46	1.51	0 59.50	0.05	14.45	21 0 45.00	8.38	
	24	3 Piscis Australis	C.	19.69	20.68	21.63	22.67	23.57	5 21.65	0.04	14.45	21 5 7.16	8.35	
	25	Lacaille, 8758	C.	21.11	22.09	23.14	24.31	25.26	9 23.18	— 0.05	14.44	21 9 8.69	8.51	
	26		B.	40.63	42.56	44.61	46.54	52.24						
	27	α Cephei	C.	29.38	31.33	33.11	35.28	37.07	15 33.17	+ 0.01	14.43	21 15 18.74	4.51	
	28		D.	14.00	19.88	21.77	23.69	25.41						
	29	Lacaille, 8821	C.	40.22	41.21	42.11	43.08	44.08	19 42.14	— 0.05	14.43	21 19 27.66	8.35	
	30		B.	8.23	9.20	10.11	11.10	13.71						
	31	β Aquarii	C.	31.20	32.07	33.08	33.87	34.79	24 33.02	0.02	14.42	21 24 18.58	7.44	
	32		D.	52.36	55.11	55.98	56.84	57.72						
	33	Lacaille, 8849	D.	22.18	25.39	26.48	27.38	28.35	27 25.96	26.02	14.42	21 26 45.52	8.45	
	34	Lacaille, 8862	C.	30.30	31.37	32.33	33.36	34.38	30 32.35	0.05	14.41	21 30 17.89	8.44	
	35	Lacaille, 8890	C.	4.91	5.94	6.89	7.90	8.83	34 6.89	0.04	14.41	21 33 52.44	8.22	
	36	Lacaille, 8907	C.	41.62	42.70	43.63	44.68	45.59	37 43.64	0.05	14.41	21 37 29.19	8.36	
	37	Lacaille, 8947	C.	46.22	47.32	48.23	49.27	50.24	44 48.26	0.04	14.40	21 44 33.81	8.32	
	38	Lacaille, 8965	C.	6.00	7.04	7.96	9.11	10.10	48 8.04	0.05	14.39	21 47 53.60	8.47	
	39	Lacaille, 8983	C.	53.50	54.56	55.48	56.50	57.47	51 55.50	0.05	14.39	21 51 41.07	8.32	
	40	Lacaille, 9003	C.	2.27	3.29	4.38	5.30	6.34	55 4.32	0.04	14.39	21 54 49.88	8.31	
	41		B.	32.81	33.72	34.61	35.42	38.17						
	42	α Aquarii	C.	55.40	56.27	57.22	57.98	58.82	58 57.25	— 0.02	—14.38	21 58 42.85	— 7.38	
	43		D.	16.42	19.16	20.06	20.91	21.73						

12. Dim.

	r.	
Sept. 30.	Image west 0.04.	Clamp west.
21h. 20m.	Image west 0.12.	Clamp east.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate	m.	n.	c.
h.	s.	s.	s.	s.	s.
Sept. 30, 20.5	— 14.49	+ 0.074	+ 0.020	+ 0.038	— 0.038

Hosted by Google

DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
Sept. 30	1	B. A. C., 7729 - - -	C.	51.48	52.40	53.32	54.38	55.34	3 53.38	— 0.04	—14.37	22 3 38.96	— 8.29	Y.
	2	B. A. C., 7739 - - -	C.	1.90	2.91	3.90	4.91	5.93	5 3.91	0.04	14.37	22 4 49.49	8.28	
	3		B.	23.63	24.60	25.46	26.30	29.17						
	4	θ Aquarii - - - - -	C.	46.89	47.82	48.67	49.57	50.39	9 48.59	0.02	14.37	22 9 34.20	7.63	
	5		D.	8.09	10.73	11.62	12.50	13.41						
	6		B.	46.88	47.77	48.63	49.51	52.38						
	7	ρ Aquarii - - - - -	C.	9.86	10.78	11.69	12.61	13.49	13 11.72	0.02	14.36	22 12 57.33	7.62	
	8		D.	31.17	33.97	34.87	35.71	36.50						
	9		B.	4.61	5.68	6.72	7.63	10.72						
Oct. 3	10	h^2 Sagittarii - - - -	C.	29.81	30.87	31.76	32.81	33.70	28 31.83	0.12	12.82	19 28 18.89	7.88	
	11		D.	52.92	56.11	57.16	58.08	58.91						
	12	✡ (7.8) —25° 11′ - -	C.	24.38	25.37	26.32	27.30	28.31	33 26.34	0.12	12.82	19 33 13.39	7.90	
	13		B.	30.34	31.21	32.16	32.92	35.77						
	14	γ Aquilæ - - - - -	C.	53.32	54.38	55.27	56.18	56.93	39 55.27	0.12	12.82	19 39 42.33	6.22	
	15		D.	14.77	17.57	18.48	19.46	20.25						
	16	B. A. C., 6795 - - -	C.	22.94	23.93	24.93	25.92	26.88	43 24.92	0.12	12.82	19 43 11.98	8.07	
	17		B.	20.64	21.53	22.47	23.33	26.11						
	18	β Aquilæ - - - - -	C.	43.53	44.56	45.42	46.32	47.11	48 45.40	0.12	12.81	19 48 32.47	6.46	
	19		D.	4.74	7.53	8.38	9.24	10.10						
	20	B. A. C., 6864 - - -	C.	23.31	24.25	25.24	26.17	27.07	53 25.21	0.12	12.81	19 53 12.27	7.86	
	21	B. A. C., 6887 - - -	C.	57.25	58.34	59.32	0.30	1.28	56 59.30	0.12	12.81	19 56 46.37	8.24	
	22	Lacaille, 8354 - - -	C.	45.52	46.56	47.57	48.63	49.70	0 47.60	0.12	12.81	20 0 34.66	8.56	
	23	λ Ursæ Minoris - - -	C.	- -	- -	30.00	18.00	0.00	3 16.00	- -	- -	- - - -	- -	
	24		B.	4.57	5.59	6.61	7.47	10.29						
	25	A. C., 20366 - - -	C.	28.60	29.56	30.50	31.34	32.35	9 30.47	0.12	12.80	20 9 17.55	7.62	
	26		D.	50.61	53.48	54.43	55.37	56.25						
	27		B.	51.81	52.80	53.76	54.72	57.67						
	28	A. C., 20423 - - -	C.	15.86	16.77	17.61	18.64	19.46	13 17.64	0.12	12.80	20 13 4.72	7.62	
	29		D.	37.67	40.53	41.52	42.48	43.34						
	30	B. A. C., 7033 - - -	D.	13.00	16.16	17.11	18.18	19.17	20 16.72	25.97	12.79	20 19 37.96	8.32	
	31	Lacaille, 8466 - - -	C.	41.09	42.16	43.18	44.11	45.20	22 43.15	0.12	12.79	20 22 30.23	8.31	
	32	Lacaille, 8485 - - -	C.	33.40	34.48	35.48	36.44	37.36	25 35.43	0.12	12.79	20 25 22.52	8.32	
	33	B. A. C., 7111 - - -	C.	50.84	51.81	52.72	53.66	54.61	29 52.73	0.12	12.79	20 29 39.82	7.95	
	34		B.	23.31	24.22	25.15	26.04	28.73						
	35	Weisse, 847 - - -	C.	46.32	47.31	48.16	49.09	49.92	33 48.20	0.12	12.79	20 33 35.29	7.36	
	36		D.	7.53	10.43	11.37	12.20	13.16						
	37		B.	53.88	54.81	55.68	56.55	59.29						
	38	Weisse, 942 - - -	C.	17.07	17.91	18.77	19.68	20.56	37 18.85	0.12	12.79	20 37 5.94	7.42	
	39		D.	38.44	41.18	42.08	42.96	43.91						
	40	B. A. C., 7205 - - -	C.	17.61	18.52	19.48	20.51	21.36	41 19.50	0.12	12.78	20 41 6.59	8.15	
	41	Lacaille, 8608 - - -	C.	53.38	54.50	55.46	56.55	57.52	44 55.48	0.12	12.78	20 44 42.58	8.49	
	42	Lacaille, 8619 - - -	C.	33.17	34.26	35.29	36.38	37.41	47 35.30	0.12	12.78	20 47 22.40	8.49	
	43	✡ (7) —32° 2′ - - -	B.	11.16	12.27	13.29	14.34	17.58	47 40.17	0.12	12.78	20 47 27.27	8.49	
	44		D.	2.81	5.93	7.07	8.08	9.14						
	45	Lacaille, 8640 - - -	B.	28.21	29.21	30.21	31.26	34.31	52 56.57	0.12	12.78	20 52 43.67	8.39	
	46		D.	18.71	21.92	23.06	23.92	24.91						
	47	✡ (7) —30° 19′ - -	C.	57.55	58.61	59.59	0.59	1.61	52 59.59	— 0.12	—12.78	20 52 46.69	— 8.39	

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
Oct. 3, 21.0	— 12.77	+ 0.034	— 0.083	— 0.008	— 0.038

Oct'r 1. { Image west 0.04. Clamp east. (*r.*)
{ Image east 0.02. Clamp west.

Azimuth cor., October 3, from λ Ursæ Minoris and β Aquilæ.

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s	m. s.	s.	h. m. s.	s.	
Oct. 3	1	δ Microscopii	C.	52.52	53.59	54.68	55.69	56.71	57 54.64	— 0.12	—12.77	20 57 41.74	— 8.43	Y.
	2	Lacaille, 8701	C.	55.82	56.91	57.88	58.91	59.84	0 57.87	0.12	12.77	21 0 44.98	8.33	
	3	B. A. C., 7359	C.	27.84	28.89	29.83	30.87	31.78	5 29.84	0.12	12.77	21 5 16.95	8.14	
	4	✡ (8) —25° 28′	C.	37.21	38.26	39.24	40.33	41.21	5 39.25	0.12	12.77	21 5 26.36	8.14	
	5	Lacaille, 8758	C.	19.32	20.41	21.52	22.68	23.68	9 21.52	0.12	12.77	21 9 8.63	8.46	
	6	Lacaille, 8787	C.	49.08	50.13	51.11	52.07	52.96	13 51.07	0.12	12.76	21 13 38.18	8.37	
	7		B.	2.73	3.87	4.89	5.77	8.80						
	8	A. C., 21404	C.	28.29	29.38	30.38	31.33	32.35	20 30.37	0.12	12.76	21 20 17.48	8.24	
	9		D.	51.82	55.06	55.93	56.92	58.03						
	10		C.	13.61	14.66	15.71	16.71	17.71						
	11	A. C., 21492	D	37.27	40.31	41.30	42.27	43.25	28 40.77	25.11	12.76	21 28 2.91	8.20	
	12		E.	2.58	3.71	6.52	7.48	8.50						
	13	Struve Cat. Gen., 2611	E.	24.31	25.27	27.90	28.80	29.64	31 27.18	44.92	12.75	21 30 29.51	7.25	
	14		B.	6.71	7.60	8.58	9.46	12.11						
	15	Weisse, 916	C.	29.41	30.35	31.25	32.17	32.94	38 31.28	0.12	12.75	21 38 18.41	7.27	
	16		D	50.47	53.18	54.11	54.97	55.93						
	17	Lacaille, 8968	C.	21.32	22.40	23.34	24.21	25.21	49 23.30	0.12	12.74	21 49 10.43	8.23	
	18	Lacaille, 8983	C.	51.77	52.84	53.82	54.92	55.90	51 53.85	0.12	12.74	21 51 40.98	8.28	
	19	Lacaille, 9007	D.	18.38	21.58	22.69	23.70	24.61	56 22.19	26.02	12.74	21 55 43.43	8.35	
	20		B.	31.08	31.93	32.82	33.77	36.42						
	21	α Aquarii	C.	53.79	54.73	55.64	56.51	57.35	58 55.62	0.12	12.74	21 58 42.76	7.35	
	22		D.	14.61	17.61	18.54	19.37	20.20						
	23	B. A. C., 7729	C.	49.82	50.80	51.71	52.89	53.92	3 51.83	0.12	12.74	22 3 38.97	8.25	
	24	Lacaille, 9131	C.	37.57	38.60	39.56	40.50	41.50	18 39.55	0.12	12.73	22 18 26.69	8.25	
	25	Lacaille, 9151	C.	14.58	15.50	16.50	17.57	18.60	22 16.55	0.12	12.72	22 22 3.70	8.21	
	26	Lacaille, 9169	C.	0.41	1.38	2.39	3.50	4.51	26 2.44	0.12	12.72	22 25 49.59	8.30	
	27		B.	5.41	6.38	7.25	8.08	10.68						
	28	η Aquarii	C.	28.07	29.08	29.92	30.78	31.58	28 29.91	0.12	12.72	22 28 17.07	7.45	
	29		D.	49.08	51.77	52.66	53.58	54.41						
	30		B.	23.90	24.77	25.77	26.63	29.61						
	31	ζ Pegasi	C.	47.03	47.97	48.88	49.73	50.71	34 48.89	0.12	12.72	22 34 36.05	7.26	
	32		D.	8.38	11.18	12.08	12.91	13.81						
	33		B.	6.11	7.11	8.08	9.10	12.22						
4	34	15 Pegasi	C.	32.00	32.84	33.81	34.88	35.89	46 33.93	0.10	12.55	21 46 21.28	6.49	
	35		D.	55.67	58.73	59.82	0.87	1.81						
	36	Lacaille, 9003	C.	0.39	1.42	2.46	3.41	4.46	55 2.43	0.05	12.54	21 54 49.83	8.25	
	37		B.	30.73	31.71	32.60	33.48	36.27						
	38	α Aquarii	C.	53.56	54.52	55.50	56.27	57.15	58 55.39	0.07	12.54	21 58 42.78	7.33	
	39		D.	14.51	17.30	18.21	19.10	19.89						
	40	B. A. C., 7715	C.	19.48	20.52	21.53	22.51	23.50	2 21.51	0.05	12.54	22 2 8.92	8.31	
	41	B. A. C., 7739	C.	0.06	1.11	2.13	3.13	4.10	5 2.11	0.05	12.53	22 4 49.52	8.23	
	42		B.	21.88	22.81	23.68	24.60	27.33						
	43	θ Aquarii	C.	44.84	45.80	46.66	47.60	48.38	9 46.72	0.06	12.53	22 9 34.13	7.58	
	44		D.	6.19	8.96	9.88	10.71	11.56						
	45		B.	12.71	14.08	15.58	16.78	20.97						
	†46	α Lacertæ	C.	47.93	49.54	50.85	52.56	53.74	25 50.76	— 0.14	—12.52	22 25 38.10	— 6.50	
	47		D.	20.41	24.38	25.96	27.32	28.65						

46. Through clouds.

Oct. 3. 22*h*. 40*m*. Image east 0.09 *r*. Clamp west.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m*.	*n*.	*c*.
h.	s.	s.	s.	s.	s.
Oct. 3, 21.0	— 12.77	+ 0.034	— 0.083	— 0.008	— 0.038

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Date.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
	1		B.	23.55	24.51	25.41	26.25	29.07						
Oct. 4	2	ζ Pegasi	C.	46.71	47.62	48.49	49.42	50.27	34 48.55	— 0.08	—12.51	22 34 35.96	— 7.25	Y.
	3		D.	8.09	10.87	11.76	12.68	13.50						
	4		B	29.00	29.91	30.78	31.69	32.61						
	†5	✡ —14° 22′	C.	50.64	53.37	54.41	55.28	56.21	42 53.94	0.06	12.50	22 42 41.38	7.76	
	6		D.	14.10	15.00	17.84	18.68	19.57						
	7	Lacaille, 9296	C.	0.48	1.47	2.41	3.46	4.37	47 2.44	0.05	12.50	22 46 49.89	8.07	
	8		B.	46.75	47.77	48.71	49.80	52.97						
	9	α Piscis Australis	C.	13.17	14.21	15.21	16.28	17.32	50 15.22	0.05	12.49	22 50 2.68	8.25	
	10		D.	37.41	40.62	41.72	42.71	43.67						
	11	Lacaille, 9333	C.	58.96	59.98	0.90	1.96	2.97	54 0.95	0.05	12.49	22 53 48.41	8.18	
	12	Lacaille, 9356	C.	23.15	24.25	25.31	26.27	27.33	56 25.26	0.05	12.49	22 56 12.72	8.22	
	13	Lacaille, 9373	C.	38.77	39.81	40.85	41.89	42.80	59 40.82	0.05	12.48	22 59 28.29	8.19	
	14	Lacaille, 9391	B.	32.82	33.89	34.88	35.90	38.91	4 0.62	0.05	12.48	23 3 48.09	8.08	
	15		D.	22.34	25.36	26.42	27.37	28.27						
	16	✡ (7) —27° 39′	C.	0.20	1.21	2.24	3.26	4.31	4 2.24	0.05	12.48	23 3 49.71	8.08	
	17	Lacaille, 9411	C.	9.10	10.04	11.07	12.07	12.92	8 11.04	0.05	12.48	23 7 58.51	8.01	
	18	Lacaille, 9436	D.	5.04	8.21	9.27	10.27	11.17	12 8.79	25.81	12.47	23 11 30.51	8.11	
	19	Lacaille, 9453	C.	43.21	44.24	45.19	46.20	47.10	15 45.19	0.05	12.47	23 15 32.66	7.95	
	20	Lacaille, 9473	C.	3.51	4.54	5.49	6.53	7.50	19 5.51	0.05	12.47	23 18 53.00	8.04	
	21	Lacaille, 9497	C.	12.48	13.48	14.41	15.44	16.38	23 14.44	0.05	12.46	23 23 1.92	7.89	
	22	Lacaille, 9527	C.	35.15	36.16	37.13	38.08	39.08	28 37.12	0.05	12.46	23 28 24.61	8.00	
	23	Lacaille, 9547	C.	45.23	46.36	47.42	48.49	49.50	32 47.40	0.05	12.45	23 32 34.90	8.12	
	24	Lacaille, 9568	C.	0.86	1.91	2.89	3.91	4.88	36 2.89	0.05	12.45	23 35 50.39	8.01	
	25	✡ (7.8) —28° 40′	C.	21.06	22.11	23.11	24.12	25.07	41 23.09	0.05	12.45	23 41 10.60	7.96	
	26	Lacaille, 9605	C.	22.12	23.21	24.13	25.17	26.14	42 24.15	0.05	12.45	23 42 11.66	7.95	
	27	Lacaille, 9636	C.	47.13	48.20	49.16	50.25	51.22	46 49.19	0.05	12.44	23 46 36.70	7.96	
	28	Lacaille, 9663	C.	42.20	43.31	44.39	45.37	46.44	50 44.34	0.05	12.44	23 50 31.86	8.02	
	29	Lacaille, 9695	C.	28.68	29.73	30.68	31.70	32.66	54 30.69	0.05	12.43	23 54 18.20	7.80	
	30	Lacaille, 9706	C.	28.26	29.38	30.39	31.37	32.40	57 30.36	0.05	12.43	23 57 17.88	7.90	
	31	Lacaille, 9707	D.	55.31	58.59	59.56	0.51	1.52	57 59.10	25.98	12.43	23 57 20.69	7.90	
	32	Lacaille, 9738	C.	3.56	4.57	5.51	6.48	7.38	2 5.50	0.05	12.43	0 1 53.02	7.77	
	33	Lacaille, 9766	C.	47.91	48.97	50.09	50.97	51.90	5 49.97	0.05	12.42	0 5 37.49	7.82	
	34	B. A. C., 43	C.	21.92	22.93	23.92	25.11	26.08	9 23.99	0.05	12.42	0 9 11.52	7.89	
	35	Lacaille, 55	C.	5.52	6.56	7.51	8.47	9.39	15 7.49	0.05	12.42	0 14 55.02	7.77	
	36	Lacaille, 84	C.	14.91	16.07	17.08	18.11	19.11	19 17.06	0.05	12.41	0 19 4.59	7.91	
	37		B.	49.07	49.99	50.90	51.77	54.50						
	38	12 Ceti	C.	11.97	12.88	13.82	14.69	15.48	23 13.76	0.06	12.41	0 23 1.29	7.64	
	39		D.	32.93	35.84	36.66	37.57	38.41						
	40	Polaris	C.	31.00	9.00	42.00	19.00	53.00	9 42.80	- -	- -	- - - -	- -	
	41		B.	7.74	8.70	9.67	10.58	13.31						
5	42	ω Aquilæ	C.	31.06	31.98	32.81	33.78	34.61	11 32.87	0.08	12.23	19 11 20.56	5.95	
	43		D.	52.46	55.21	56.20	57.06	57.90						
	44		B.	20.51	21.41	22.28	23.21	25.95						
	45	δ Aquilæ	C.	43.18	44.17	45.03	45.89	46.79	18 45.05	— 0.07	—12.23	19 18 32.75	— 6.42	
	46		D.	4.22	6.96	7.88	8.71	9.59						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
	h. s.	s.	s.	s.	s.
Oct. 4,	22.8 — 12.50	+ 0.055	— 0.031	— 0.047	— 0.038
5,	19.4 — 12.22	+ 0.022	— 0.031	— 0.047	— 0.038

5. Through clouds.

Oct. 4. 0*h.* 35*m.* Image east *r.* 0.07. Clamp west. Stars steady; interrupted by clouds. Azimuth cor., October 4 and 5, from Polaris and 12 Ceti of the 4th.

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s	s	
Oct. 5	1	Arg. Z., 241, 24	C.	37.47	38.51	39.41	40.42	41.41	23 39.44	— 0.05	—12.23	19 23 27.17	— 8.02	Y.
	2	Arg. Z., 235, 40	C.	25.68	26.75	27.73	28.78	29.72	29 27.73	0.05	12.22	19 29 15.46	8.08	
	† 3	Arg. Z, 394, 36	C.	25.20	26.09	26.93	27.92	28.86	33 27.00	0.05	12.22	19 33 14.73	7.95	
	† 4	Arg. Z., 239, 69	D.	16.48	19.65	20.61	21.60	22.57	40 20.18	25.05	12.22	19 39 42.91	7.94	
	5		B	20.07	20.92	21.82	22.80	25.51						
	6	β Aquilæ	C.	43.00	43.97	44.80	45.68	46.54	48 44.80	— 0.09	12.22	19 48 32.50	6.42	
	7		D.	4.07	6.87	7.79	8.64	9.54						
	8		B.	30.47	31.40	32.31	33.19	35.91						
Oct. 8	† 9	γ Aquilæ	C.	53.59	54.58	55.46	56.39	57.22	39 55.43	+ 0.04	13.20	19 39 42.27	6.14	
	10		D.	14.87	17.69	18.64	19.44	20.37						
	11		B.	51.74	52.63	53.58	54.50	57.13						
	12	α Aquilæ	C.	14.63	15.58	16.55	17.44	18.37	44 16.54	0.04	13.20	19 44 3.38	6.30	
	13		D.	35.82	38.70	39.64	40.51	41.31						
	14		B.	20.88	21.80	22.61	23.52	26.30						
	15	β Aquilæ	C.	43.85	44.73	45.67	46.56	47.42	48 45.60	+ 0.04	13.20	19 48 32.45	— 6.38	
	16		D.	4.82	7.69	8.57	9.41	10.24						
	17	λ Ursæ Minoris	C.	59.00	47.00	31.00	20.00	6.00	2 32.60	— 7.88	13.19	20 2 12.53	+ 105.97	
	18		B.	52.73	53.68	54.69	55.61	58.42						
	19	A. C., 20378	C.	16.84	17.79	18.62	19.57	20.53	10 18.70	+ 0.09	13.19	20 10 5.60	— 7.60	
	20		D.	38.87	41.89	42.86	43.81	44.62						
	21	A. C., 20423	D.	37.86	40.66	41.66	42.64	43.43	13 52.92	— 35.10	13.19	20 13 4.63	7.55	
	22		E.	1.71	2.59	5.31	6.20	7.12						
	23		B.	26.51	27.51	28.33	29.17	31.91						
	24	Weisse, 849	C.	49.66	50.55	51.46	52.37	53.17	33 51.45	+ 0.08	13.18	20 33 38.35	7.30	
	25		D.	10.97	13.72	14.61	15.51	16.37						
	26		B.	0.11	0.97	1.87	2.87	5.67						
	27	* (9) —10° 37′	C.	23.26	24.13	24.97	25.90	26.82	38 25.11	+ 0.08	13.18	20 38 12.01	7.35	
	28		D.	44.69	47.50	48.46	49.31	50.18						
	29	✡ (9.10) —10° 29′	D.	57.83	0.73	1.77	2.62	3.46	39 1.28	— 22.72	13.18	20 38 25.38	7.35	
	30		B.	39.35	41.32	43.48	45.23	51.01						
	31	α Cephei	C.	27.87	29.84	31.58	33.62	35.48	15 31.78	— 0.20	13.17	21 15 18.42	4.24	
	32		D.	12.56	18.44	20.58	22.31	24.08						
	33		B.	6.80	7.73	8.67	9.48	12.24						
	34	β Aquarii	C.	29.82	30.76	31.63	32.52	33.37	24 31.57	+ 0.07	13.16	21 24 18.48	7.34	
	35		D.	50.84	53.62	54.49	55.38	56.25						
	36	8 Piscis Australis	C.	22.66	23.64	24.71	25.71	26.71	28 24.69	0.11	13.16	21 28 11.63	8.18	
	37	Lacaille, 8870	C.	17.21	18.21	19.23	20.21	21.17	31 19.21	0.11	13.16	21 31 6.15	8.21	
	38	Lacaille, 8891	C.	15.78	16.73	17.72	18.74	19.73	34 17.74	0.11	13.16	21 34 4.69	8.23	
	39	Lacaille, 8902	C.	50.68	51.67	52.66	53.57	54.57	36 52.63	0.10	13.16	21 36 39.57	8.10	
	40	Lacaille, 8918	C.	54.32	55.41	56.40	57.33	58.31	39 56.35	0.11	13.16	21 39 43.31	8.23	
	41	Lacaille, 8937	C.	59.86	0.84	1.74	2.79	3.79	42 1.80	0.11	13.16	21 41 48.76	8.24	
	42	* (7) —36° 44′	C.	23.68	24.86	25.86	27.08	28.17	46 25.93	0.13	13.16	21 46 12.90	8.65	
	43	Lacaille, 8968	C.	21.40	22.47	23.38	24.35	25.34	49 23.39	0.11	13.16	21 49 10.34	8.17	
	44	Lacaille, 8985	C.	4.54	5.60	6.67	7.72	8.71	52 6.65	0.12	13.15	21 51 53.61	8.40	
	45	Lacaille, 9004	C.	29.94	30.97	32.06	33.07	34.06	55 32.02	0.11	13.15	21 55 18.98	8.32	
	46	✡ (7) —30° 21′	C.	8.52	9.56	10.60	11.61	12.60	59 10.58	0.11	13.15	21 59 57.54	8.31	
	47	B. A. C, 7729	C.	50.01	51.10	52.03	52.94	53.94	3 52.00	+ 0.11	—13.15	22 3 38.96	— 8.20	

3. Dim; through clouds.
4. Dim; through clouds.
9. Unsteady. *r.*
Oct. 8. 22*h.* 35*m.* Image 0.00. Clamp west.
8. Azimuth cor. from λ Ursæ Minoris, α Cephei, and Polaris, of 4th.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
Oct. 8, 20.9	— 13.17	+ 0.020	+ 0.095	— 0.113	— 0.038

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
	1		B.	22.33	23.32	24.24	25.16	27.81						
Oct. 8	2	θ Aquarii	C.	45.27	46.30	47.17	48.04	48.88	9 47.21	+ 0.07	—13.15	22 9 34.13	— 7.55	Y.
	3		D.	6.66	9.33	10.37	11.23	12.06						
	4	Lacaille, 9109	C.	25.11	26.09	27.07	27.96	28.93	14 27.03	0.11	13.15	22 14 13.99	8.11	
	5	Lacaille, 9127	C.	15.12	16.12	17.13	18.21	19.19	17 17.15	0.11	13.15	22 17 4.12	8.16	
	6	Lacaille, 9135	C.	9.54	10.64	11.59	12.46	13.46	20 11.54	0.11	13.15	22 19 58.50	8.14	
	7	Lacaille, 9163	C.	1.12	2.22	3.22	4.36	5.41	24 3.27	0.13	13.14	22 23 50.25	8.51	
	8		B.	5.57	6.47	7.33	8.23	10.97						
	9	η Aquarii	C.	28.27	29.28	30.18	31.09	31.90	28 30.14	0.06	13.14	22 28 17.05	7.42	
	10		D.	49.36	51.92	52.89	53.83	54.80						
	11		B.	58.44	59.51	0.89	- -	5.27						
11	12	α Lyræ	C.	27.79	28.73	29.98	31.21	32.08	32 29.78	+ 0.05	14.12	18 32 15.71	3.92	✡ N.
	13		D.	54.50	57.99	59.28	- -	1.61						
	14		B.	22.33	23.25	24.20	25.19	27.80						
	15	δ Aquilæ	C.	45.31	46.12	47.06	47.89	48.81	18 47.02	— 0.13	14.18	19 18 32.75	6.34	
	16		D.	6.29	8.91	9.83	10.67	11.68						
	17	h^2 Sagittarii	B.	6.09	7.00	8.00	9.00	12.13	28 20.80	+ 12.25	14.20	19 28 18.86	7.76	
	18		C.	31.21	32.19	33.21	34.20	35.02						
	19	e^2 Sagittarii	D.	12.35	15.13	15.94	17.24	17.98	35 15.73	— 23.50	14.21	19 34 38.02	7.32	
	20		A.	29.58	30.51	31.46	34.21	35.21						
	21		B.	52.88	53.75	54.73	55.67	57.13						
	22	α Aquilæ	C.	15.78	16.81	17.70	18.73	19.53	44 17.63	0.10	14.22	19 44 3.31	6.27	
	23		D.	37.13	39.91	40.85	41.71	42.55						
	24		E.	0.20	0.97	3.72	4.58	5.47						
	25	λ Ursæ Minoris	C.	43.00	36.00	20.00	7.00	54.00	2 20.00	1.80	14.20	20 2 3.96	- -	
	26		C.	23.21	24.17	25.22	26.11	26.99						
	27	Moon's 1st Limb	D.	45.86	48.78	49.77	50.78	51.69	13 49.32	24.28	14.26	20 13 10.78	- -	
	28		E.	10.30	11.43	14.09	15.19	16.16						
	29		A.	.20	.07	.07	.66	.64						
	30		B.	.72	.72	.72	.65	.30						
	31	τ^2 Capricorni	C.	.46	.46	.35	.32	.31	31 48.28	0.10	14.28	20 31 33.90	7.49	
	32		D.	.21	.97	.93	.91	.77						
	33		E.	.77	.62	.44	.38	.46						
	34		B.	23.80	25.27	26.61	27.80	31.51						
	35	α Cygni	C.	55.97	57.38	58.80	0.07	1.17	36 58.64	0.15	14.29	20 36 44.20	4.80	
	36		D.	25.70	29.38	30.87	32.00	33.30						
	37	α Cephei	C.	29.08	30.80	32.91	34.41	36.36	16 56.62	24.04	14.34	21 16 18.24	4.13	
	38		D.	13.73	19.36	21.41	23.20	24.91						
	39		B.	8.31	9.20	10.07	11.11	13.71						
	40	β Aquarii	C.	31.22	32.11	32.91	33.82	34.82	24 33.01	— 0.13	14.35	21 24 18.53	7.29	
	41		D.	52.29	55.06	55.91	56.79	57.78						
	42		A.	51.79	52.72	53.70	56.38	57.42						
	43	ε Pegasi	B.	14.93	15.87	16.87	17.68	20.52	36 17.19	+ 22.62	14.37	21 36 25.44	6.88	
	44		C.	38.18	39.14	39.97	40.96	41.77						
	45		A.	10.13	11.07	12.13	14.94	16.15						
	46		B.	35.36	36.20	37.36	38.43	41.07						
	47	16 Pegasi	C.	0.46	1.56	2.45	3.68	4.51	47 2.51	— 0.10	14.38	21 46 48.03	6.52	
	48		D.	23.90	26.81	27.82	28.79	29.61						
	49		E.	48.87	49.90	52.94	53.70	54.87						
	50		B.	32.73	33.43	34.34	35.51	38.06						
	51	α Aquarii	C.	55.59	56.39	57.40	58.22	59.10	58 57.30	— 0.13	—14.40	21 58 42.78	— 7.31	
	52		D.	16.62	19.11	20.25	20.96	21.87						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
Oct. 11, 20.5	— 14.28	— 0.080	— 0.105	— 0.005	— 0.025

Oct. 11. Azimuth cor. from λ Ursæ Minoris.

11. 21*h*. Image east 0.11 *r*. Clamp west.

✡ Prof. Newcomb.

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
	1		A.	40.74	41.68	42.93	46.20	47.51						
	2		B.	9.25	10.33	11.65	12.85	16.05						
Oct. 11	3	Lalande, 43630	C.	37.47	38.70	39.70	41.14	42.17	14 39.83	— 0.10	—14.42	22 14 25.32	— 6.54	N.
	4		D.	3.72	7.11	8.28	9.47	10.68						
	5		E.	32.07	33.08	36.57	37.67	38.79						
	6		A.	44.53	45.46	46.47	49.34	50.51						
	7		B.	9.57	10.64	11.70	12.61	15.70						
	8	μ Pegasi	C.	34.58	35.50	36.51	37.52	38.46	43 30.30	+ 6.04	14.45	22 43 21.90	7.09	
	9		E.	22.11	23.38	26.22	27.14	28.15						
	10		B.	9.51	10.52	11.58	12.56	15.17						
	11	δ Aquarii	C.	33.56	34.47	35.28	36.27	37.11	47 35.30	— 0.13	14.46	22 47 20.71	7.78	
	12		D.	55.24	57.81	59.26	0.21	1.00						
	13		A.	47.11	48.66	49.78	53.17	54.61						
	14		B.	17.71	18.93	19.95	21.38	25.18						
	15	o Andromedæ	C.	48.37	49.56	50.71	51.97	53.10	55 50.68	0.10	14.47	22 55 36.11	7.03	
	16		D.	16.26	20.03	21.22	22.36	23.63						
	17		E.	46.92	48.08	51.57	52.76	53.93						
	18		B.	10.38	11.39	12.29	13.13	16.04						
12	19	Sun's 1st Limb	C.	33.38	34.37	35.13	36.06	37.04	10 35.25	0.15	14.41	13 10 20.69	- -	
	20		D.	54.71	57.46	58.36	59.11	59.93						
	21		A.	57.16	58.07	59.18	1.59	2.78						
	22		B.	20.41	21.36	22.28	23.23	25.81						
	23	Sun's 2d Limb	C.	43.39	44.22	45.21	46.11	47.06	12 45.21	0.11	14.41	13 12 30.69	- -	
	24		D.	4.62	7.49	8.29	9.22	10.06						
	25		E.	27.70	28.57	31.17	32.12	33.12						
	26		A.	4.97	6.07	7.68	11.97	13.63						
	27		B.	40.56	41.86	43.11	44.63	48.89						
	28	η Ursæ Majoris	C.	15.86	17.31	18.77	20.13	21.50	42 18.70	0.01	14.40	13 42 4.29	3.17	
	29		D.	48.95	52.72	54.26	55.61	57.00						
	30		E.	24.08	25.47	29.41	30.73	32.23						
	31		A.	44.97	45.92	46.91	49.73	50.82						
	32		B.	9.50	10.41	11.45	12.23	15.08						
	33	α Bootis	C.	33.62	34.62	35.60	36.49	37.37	9 35.49	0.07	14.38	14 9 21.04	4.49	
	34		D.	55.92	58.56	59.70	0.81	1.71						
	35		E.	20.27	21.11	23.91	24.77	25.78						
	36		A.	10.86	11.82	12.93	15.82	16.95						
	37		B.	36.48	37.69	38.73	39.69	42.88						
	38	α Coronæ Borealis	C.	2.22	3.18	4.09	5.13	6.12	29 4.20	0.06	14.34	15 29 49.80	4.19	
	39		D.	25.73	28.99	29.93	30.88	31.96						
	40		E.	51.35	52.42	55.41	56.29	57.41						
	41		A.	39.89	41.27	42.31	45.07	46.32						
	42		B.	4.83	5.76	6.81	7.78	10.71						
	43	Venus, Centre	C.	29.26	30.38	31.43	32.39	33.22	44 31.34	— 0.13	14.33	15 44 16.88	- -	
	44		D.	51.84	54.92	55.87	56.97	57.91						
	45		E.	16.61	17.41	20.53	21.62	22.46						
	46	Antares	B.	43.62	44.75	45.59	46.56	49.53	21 58.43	+ 12.32	14.31	16 21 56.44	6.68	
	47		C.	8.87	9.91	10.83	11.81	12.88						
	48		B.	.31	.53	.72	.75	.45						
	49	α Lyræ	C.	.76	.83	.98	.18	.13	32 29.96	— 0.09	14.24	18 32 15.63	3.89	
	50		D.	.60	.97	.37	.40	.41						
	51		B.	43.88	44.95	46.06	46.94	50.21						
	52	β Lyræ	C.	11.01	12.08	13.14	14.23	15.26	45 13.52	0.41	14.24	18 44 58.87	4.39	
	53		D.	- -	39.51	40.41	41.48	42.68						
	54	ζ Aquilæ	C.	16.72	17.63	18.47	19.29	20.25	59 29.95	— 11.66	—14.23	18 59 4.07	— 5.64	
	55		D.	38.04	40.89	41.91	42.65	43.68						

The azimuth from Polaris and Polaris, S. P., of the 14th.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m.	n.	c.
h.	s.	s.	s.	s.	s.
Oct. 12. 17. 0	— 14.29	+ 0.032	— 0.105	+ 0.064	— 0.025

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s	m. s.	m. s.	s.	h. m. s.	s.	
	1		B.	22.31	23.24	24.17	24.95	27.71						
Oct. 12	2	δ Aquilæ	C.	45.14	45.97	46.94	47.87	48.72	18 46.90	— 0.12	—14.22	19 18 32.57	— 6.33	N.
	3		D.	6.08	8.68	9.64	10.69	11.47						
	4		B.	6.03	6.88	7.81	8.77	11.89						
	5	h^2 Sagittarii	C.	31.06	32.15	33.05	33.88	34.88	28 33.03	0.16	14.21	19 28 18.66	7.74	
	6		D.	54.21	57.18	58.37	59.19	0.06						
	7		B.	38.08	38.98	39.86	40.80	43.71						
	8	e^1 Sagittarii	C.	1.60	2.60	3.70	4.61	5.28	33 3.63	0.16	14.21	19 32 49.26	7.30	
	9		D.	23.61	26.53	27.42	28.32	29.29						
	10		B.	31.67	32.35	33.29	34.26	37.06						
	11	γ Aquilæ	C.	54.71	55.66	56.51	57.42	58.33	39 56.54	0.11	14.20	19 39 42.23	6.09	
	12		D.	16.07	18.73	19.80	20.68	21.52						
	13		B.	21.93	22.90	23.80	24.68	27.19						
	14	β Aquilæ	C.	44.71	45.61	46.61	47.42	48.22	48 46.59	0.13	14.05	19 48 32.40	6.33	Y.
	15		D.	5.83	8.64	9.61	10.40	11.27						
	16	B. A. C., 6888	C.	59.21	0.21	1.22	2.35	3.31	56 1.26	0.15	14.03	19 55 47.08	7.95	
	17	B. A. C., 6899	D.	25.34	28.62	29.69	30.66	31.58	59 29.18	26.07	14.03	19 58 49.07	8.14	
	18	λ Ursæ Minoris	C.	46.00	34.00	16.00	5.00	46.00	2 17.40	- -	- -	- - - -	- -	
	19		B.	38.63	39.58	40.47	41.32	44.22						
	20	A. C., 20388	C.	2.51	3.60	4.45	5.36	6.27	11 4.47	0.14	14.02	20 10 50.31	7.54	
	21		D.	24.67	27.67	28.62	29.46	30.30						
	22	✱ (7) —30° 37′	C.	1.71	2.76	3.75	4.73	5.75	17 3.74	0.15	14.02	20 16 49.57	8.21	
	23		B.	47.92	48.86	49.89	50.88	53.69						
	24	ρ Capricorni	C.	12.06	13.07	13.92	14.88	15.77	21 13.92	0.14	14.01	20 20 59.77	7.56	
	25		D.	34.16	37.01	37.97	38.96	39.80						
	26	Lacaille, 8487	C.	8.29	9.53	10.57	11.68	12.75	26 10.56	0.16	14.01	20 25 56.40	8.75	
	27		B.	22.54	23.42	24.32	25.28	28.06						
	†28	τ^2 Capricorni	C.	46.11	47.06	47.88	48.86	49.80	31 47.96	0.14	14.00	20 31 33.82	7.48	
	29		D.	7.85	10.61	11.61	12.56	13.52						
	30		B.	27.41	28.36	29.31	30.12	32.91						
	31	Weisse, 849	C.	50.65	51.52	52.44	53.36	54.30	33 52.44	0.14	14.00	20 33 38.30	7.25	
	32		D.	11.84	14.74	15.72	16.53	17.44						
	33		C.	18.15	19.17	20.06	20.93	21.82						
	34	Weisse, 942	D.	38.47	39.31	43.29	44.14	45.07	37 42.85	22.96	14.00	20 37 5.89	7.30	
	35		E.	2.82	3.67	6.43	7.31	8.17						
	36		C.	54.34	55.25	56.17	57.11	57.92						
	37	Weisse, 1059	D.	15.97	18.47	19.41	20.25	21.09	42 18.99	22.95	13.99	20 41 42.05	7.33	
	38		E.	38.69	39.69	42.61	43.53	44.41						
	39	Lacaille, 8635	C.	23.94	25.11	26.11	27.26	28.32	52 26.15	0.16	13.98	20 52 12.01	8.74	
	40		C.	36.64	37.77	38.84	40.05	41.10						
	41	Lacaille, 8667	D.	3.16	6.82	7.89	8.92	10.01	57 7.29	28.51	13.98	20 56 24.80	8.72	
	42		E.	32.07	33.20	36.56	37.63	38.68						
	43		B.	54.38	55.26	56.15	57.04	59.80						
	44	ν Aquarii	C.	17.58	18.54	19.35	20.30	21.16	2 19.41	0.14	13.98	21 2 5.30	7.44	
	45		D.	38.92	41.81	42.74	43.69	44.50						
	46		B.	18.19	19.14	20.06	20.88	24.00						
	†47	Moon's 1st Limb	C.	42.11	43.03	43.91	44.86	45.77	5 43.99	0.14	13.97	21 5 29.88	- -	
	48		D.	4.18	7.07	7.98	8.88	9.82						
	49		B.	22.77	23.73	24.72	25.57	28.37						
	50	ι Capricorni	C.	46.69	47.61	48.50	49.41	50.23	14 48.52	— 0.14	—13.96	21 14 34.41	— 7.69	
	51		D.	8.51	11.56	12.51	13.39	14.23						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
Oct. 12, 21.3	— 13.96	+ 0.055	— 0.107	+ 0.023	— 0.025

28. The seconds of transit are assumed.
47. Steady.
Azimuth cor. for Y.'s obs'ns from λ Ursæ Minoris and β Aquilæ.
Oct. 12. 21*h*. 40*m*. Image east *r.* 0.09. Clamp west.

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
	1		B.	7.83	8.73	9.65	10.52	13.23						
Oct. 12	2	β Aquarii - - - -	C.	30.71	31.66	32.51	33.37	34.25	24 32.52	— 0.13	—13.96	21 24 18.43	— 7.30	Y.
	3		D.	51.65	54.61	55.52	56.37	57.21						
	4		B.	32.23	33.20	34.07	34.91	37.71						
	5	α Aquarii - - - -	C.	54.92	55.84	56.72	57.61	58.48	58 56.74	0.13	13.92	21 58 42.68	7.27	
	6		D.	16.06	18.77	19.66	20.51	21.36						
	7		B.	46.87	47.82	48.81	49.87	52.87						
	8	B. A. C., 7745 - - -	C.	12.19	13.17	14.21	15.12	16.07	6 14.16	0.15	13.92	22 6 0.10	8.11	
	9		D.	35.42	38.46	39.56	40.57	41.46						
	10		B.	23.43	24.25	25.13	25.96	28.82						
	11	θ Aquarii - - - -	C.	46.47	47.27	48.15	49.06	49.88	9 48.20	0.14	13.91	22 9 34.15	7.53	
	12		D.	7.65	10.42	11.26	12.21	13.11						
	13		B.	46.53	47.46	48.31	49.19	51.86						
	†14	ρ Aquarii - - - - -	C.	9.46	10.40	11.24	12.14	12.96	13 11.30	0.14	13.91	22 12 57.25	7.52	
	15		D.	30.66	33.48	34.39	35.26	36.16						
	16	Lacaille, 9126 - - -	C.	9.06	10.13	11.16	12.11	13.09	17 11.11	0.15	13.91	22 16 57.06	8.01	
	17	Lacaille, 9151 - - -	C.	15.67	16.71	17.69	18.72	19.71	22 17.70	0.15	13.90	22 22 3.65	8.14	
	18		B.	56.91	57.93	59.05	0.18	3.57						
13	19	α Lyræ - - - - -	C.	25.91	27.17	28.22	29.33	30.44	32 28.25	0.09	12.37	18 32 15.79	3.86	N.
	20		D.	52.72	56.24	57.67	58.73	59.67						
	21		B.	24.97	25.89	26.73	27.66	30.30						
	22	Moon's 1st Limb - -	C.	48.46	49.47	50.21	51.16	51.99	54 50.28	0.14	12.13	21 54 38.01	- -	
	23		D.	10.07	12.90	13.91	14.83	15.61						
	24		B.	46.85	47.87	48.84	49.75	52.51						
	25	ι Aquarii - - - - -	C.	- -	11.32	12.18	13.13	14.08	59 12.44	0.30	12.12	21 59 0.02	- -	
	26		D.	32.08	34.87	35.90	36.85	37.71						
	27		B.	21.66	22.47	23.37	24.21	26.92						
	†28	θ Aquarii - - - - -	C.	44.67	45.51	46.34	47.36	48.28	9 46.43	0.14	12.11	22 9 34.18	- -	
	29		D.	5.82	8.53	9.53	10.44	11.39						
	30		B.	44.81	45.65	46.60	47.48	50.25						
	31	ρ Aquarii - - - - -	C.	7.76	8.62	9.69	10.58	11.38	13 9.63	0.14	12.11	22 12 57.38	- -	
	32		D.	29.06	31.67	32.72	33.61	34.57						
14	33	Mercury, Centre - -	C.	28.47	29.52	30.44	31.32	32.33	46 30.42	— 0.06	10.92	14 46 19.44	- -	
	34	Venus, 1st Limb - -	C.	18.68	19.56	20.48	21.46	22.27	54 20.49	+ 0.49	10.77	15 54 10.21	- -	
	35		B.	18.41	19.35	20.24	21.07	23.84						
	36	δ Aquilæ - - - - -	C.	41.36	42.23	43.11	43.98	44.88	18 43.09	— 0.02	10.51	19 18 32.56	6.29	
	37		D.	2.33	5.07	5.93	6.89	7.71						
	38		B.	18.11	18.99	19.95	20.76	23.53						
	39	β Aquilæ - - - - -	C.	41.03	41.96	42.77	43.72	44.56	48 42.83	0.02	10.48	19 48 32.33	6.31	
	40		D.	2.07	4.84	5.76	6.74	7.60						
	41		B.	15.96	16.91	17.84	18.77	21.63						
	42	A. C., 20217 - - -	C.	39.70	40.63	41.60	42.59	43.53	57 41.62	0.06	10.47	19 57 31.09	7.37	
	43		D.	1.45	4.41	5.51	6.43	7.31						
	44	λ Ursæ Minoris - - -	C.	- -	17.00	7.00	56.00	39.00	2 29.75	21.45	10.46	20 1 57.84	- -	
	45		B.	9.59	10.50	11.44	12.34	15.24						
	46	α^2 Capricorni - - - -	C.	32.99	33.94	34.85	35.76	36.57	10 34.82	0.05	10.45	20 10 24.32	7.27	
	47		D.	54.56	57.27	58.21	59.07	59.93						
	48		B.	21.11	21.95	22.96	23.90	- -						
	49	✡ —7° 21′ - - - -	C.	43.96	45.06	45.96	46.85	47.81	33 53.20	— 7.28	—10.43	20 33 35.49	— 7.10	
	50		E.	28.08	29.18	31.69	32.88	34.08						

14, 28 Recorded on fillet 1s. more throughout.
The azimuth from Polaris and Polaris, S. P.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m.	n.	c.
h.	s.	s.	s.	s.	s.
Oct. 13, 21.2	— 12.18	+ 0.070	- -	+ 0.064	— 0.025

Hosted by Google

DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
	1		B.	57.57	58.79	59.71	0.44	2.86						
Oct. 14	2	☼ (9) —10° 37′ - -	C.	20.82	21.91	22.86	23.67	24.57	38 34.05	— 11.43	—10.43	20 38 12.19	— 7.25	N.
	3		D.	42.19	44.67	45.85	46.79	47.59						
	4		E.	5.39	6.17	8.81	9.66	10.71						
	5		B.	28.47	29.41	30.35	31.46	33.99						
	6	α Aquarii - - - - -	C.	51.33	52.21	53.11	53.91	54.82	58 53.09	0.02	10.33	21 58 42.74	7.26	
	7		D.	12.11	14.87	15.88	16.82	17.61						
	8		B.	51.47	52.81	54.12	55.11	58.39						
	9	Lacaille, 9091 - - -	C.	20.16	21.26	22.51	23.68	24.69	10 22.54	0.07	10.32	22 10 12.14	8.56	
	10		D.	46.72	50.11	51.27	52.44	53.33						
	11		B.	47.13	48.12	49.30	50.51	53.89						
	12	Lacaille, 9139 - - -	C.	15.70	16.90	17.93	19.14	20.21	21 18.06	0.07	10.31	22 21 7.67	8.53	
	13		D.	42.16	45.67	46.88	48.19	49.12						
	14		B.	2.72	3.69	4.58	5.45	8.15						
	15	η Aquarii - - - - -	C.	25.53	26.37	27.29	28.21	29.10	28 27.33	0.02	10.30	22 28 17.00	7.37	
	16		D.	46.63	49.25	50.12	51.08	51.81						
	17		B.	21.23	22.20	23.19	24.03	26.84						
	18	ζ Pegasi - - - - -	C.	44.37	45.29	46.18	47.15	47.97	34 46.22	0.01	10.30	22 34 35.91	7.11	
	19		D.	5.72	8.36	9.46	10.24	11.14						
	20		A.	54.87	55.77	56.91	59.46	0.65						
	21		B.	18.40	19.31	20.31	21.22	23.97						
	22	Moon's 1st Limb - -	C.	41.61	42.48	43.47	44.38	45.30	41 43.42	0.00	10.29	22 41 33.14	- -	
	23		D.	3.07	5.52	6.69	7.61	8.60						
	24		E.	26.19	27.21	29.88	30.90	31.81						
	25		B.	10.81	11.77	12.97	13.97	17.53						
	26	Lacaille, 9298 - - -	C.	39.26	40.44	41.46	42.62	43.58	47 41.54	0.08	10.29	22 47 31.18	8.41	
	27		D.	5.66	8.96	10.37	11.37	12.37						
	28		B.	59.99	0.92	1.87	2.71	5.42						
	29	81 Aquarii - - - - -	C.	23.10	23.99	24.81	25.68	26.57	54 24.83	— 0.03	10.28	22 54 14.52	7.67	
	30		D.	44.25	46.93	47.91	48.71	49.56						
	31		A.	36.86	37.81	38.59	41.38	42.32						
	32		B.	59.94	0.83	1.81	2.71	5.42						
	33	Weisse, 1203 - - -	C.	22.94	23.86	24.71	25.98	26.57	57 13.42	+ 11.30	10.28	22 57 14.44	7.58	
	34		D.	44.10	46.76	47.70	48.64	49.54						
	35		B.	17.33	18.25	19.26	20.29	23.27						
	36	89 Aquarii - - - - -	C.	42.13	43.10	44.09	45.16	46.06	2 44.10	— 0.06	10.27	23 2 33.77	7.93	
	37		D.	5.20	7.97	8.85	9.77	10.75						
	38		C.	20.44	21.31	22.13	23.10	23.83						
	39	ψ Aquarii - - - - -	D.	41.39	44.06	44.96	45.93	46.77	7 33.36	11.32	10.27	23 7 11.77	7.59	
	40		B.	47.64	48.54	49.46	50.37	52.99						
	41	γ Piscium - - - -	C.	10.41	11.28	12.21	13.14	13.96	10 12.21	0.02	10.27	23 10 1.92	7.56	
	42		D.	31.33	34.08	35.08	35.91	36.79						
	43		B.	50.59	51.58	52.84	53.91	57.39						
	44	Lacaille, 9496 - - -	C.	19.37	20.63	21.69	22.79	23.75	23 21.64	— 0.08	10.25	23 23 11.31	8.27	
	45		D.	45.97	49.18	50.61	51.66	52.70						
	46	Weisse, 1201 - - -	B.	41.12	42.11	43.25	44.12	46.53	58 54.90	+ 11.45	10.21	23 58 56.14	7.63	
	47		C.	4.52	5.49	6.40	7.27	8.16						
	48	Neptune - - - -	D.	22.98	25.71	26.76	27.56	28.41	1 37.43	— 33.64	10.21	0 0 53.58	- -	
	49		E.	45.75	46.71	49.26	50.16	50.98						
	50	γ Pegasi - - - - -	B.	54.24	55.10	55.96	56.93	59.64	6 7.96	+ 11.57	10.20	0 6 9.34	7.68	
	51		C.	17.65	18.55	19.60	20.55	21.43						
	52	Polaris - - - - -	C.	24.00	9.00	40.00	19.00	54.00	9 41.20	+ 1.56	—10.20	1 9 32.56	— 85.44	

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
Oct. 14, 21.3	— 10.38	+ 0.065	- -	+ 0.064	— 0.025

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
Oct. 14	1	Polaris, S P.	C.	54.00	17.00	45.00	5.00	29.00	9 42.00	— 1.56	— 9.36	1 9 31.08	— 85.46	N.
	2		B.	24.14	24.92	25.71	26.51	29.16						
15	†3	Sun's 2d Limb	C.	46.97	47.87	48.76	49.68	50.64	23 48.79	— 0.04	9.36	13 22 34.09	- -	
	4		D.	8.20	10.96	11.87	12.89	13.62						
	5		B	31.31	32.23	33.31	34.26	37.39						
	6	α Coronæ Borealis	C.	57.13	58.17	59.11	0.13	1.11	28 59.06	+ 0.01	- -	- - - -	- -	
	7		D.	20.54	23.81	24.88	25.80	26.68						
	8		B.	12.23	13.11	13.87	14.89	17.53						
	9	α Serpentis	C.	35.16	36.24	36.96	37.83	38.72	37 36.93	— 0.01	- -	- - - -	- -	
	10		D.	56.09	58.90	59.97	0.84	1.60						
	11		B.	50.79	51.58	52.72	53.66	56.81						
	†12	Venus, 1st Limb	C.	15.31	16.27	17.23	18.31	19.14	59 17.34	0.06	9.36	15 59 8.47	- -	
	13		D.	38.11	41.05	42.08	43.12	43.98						
	14		B.	38.28	39.37	40.34	41.31	44.37						
	15	α Scorpii	C.	3.72	4.65	5.67	6.77	7.71	21 5.75	0.06	- -	- - -	- -	
	16		D.	27.14	30.20	31.32	32.26	33.14						
	17	λ Ursæ Minoris	C.	- -	- -	59.00	48.00	30.00	2 45.67	- -	- -	- - -	- -	Y.
	18		B.	7.89	8.87	9.82	10.67	13.51						
	19	α^2 Capricorni	C.	31.40	32.30	33.15	34.10	34.91	10 33.18	0.35	8.65	20 10 24.17	7.23	
	20		D.	52.88	55.64	56.57	57.48	58.46						
	21		B.	42.93	43.78	44.67	45.67	48.55						
	22	ρ Capricorni	C.	6.81	7.78	8.68	9.63	10.49	21 8.72	0.37	8.64	20 20 59.72	7.51	
	23		D.	28.94	31.85	32.78	33.71	34.57						
	24	Lacaille, 8485	D.	53.54	56.58	57.77	58.75	59.80	25 57.29	26.25	8.63	20 25 22.41	8.12	
	25	Lacaille, 8496	D.	6.39	9.45	10.52	11.50	12.41	28 10.05	25.63	8.62	20 27 35.79	7.99	
	26	B. A. C., 7135	C.	23.36	24.34	25.31	26.39	27.32	32 25.34	0.41	8.62	20 32 16.31	8.04	
	27		B.	0.51	1.59	2.71	3.71	7.08						
	28	α Microscopii	C.	28.11	29.16	30.19	31.30	32.30	41 30.24	0.44	8.60	20 41 21.20	8.42	
	29		D.	53.45	56.72	57.88	58.97	59.93						
	30	Lacaille, 8630	C.	23.98	25.23	26.26	27.36	28.41	51 26.25	0.46	8.58	20 51 17.21	8.58	
	†31	Lacaille, 8657	C.	22.61	23.75	24.92	26.29	27.35	55 24.92	0.50	8.58	20 55 15.90	9.08	
	32	B. A. C., 7349	C.	28.93	30.04	31.21	32.28	33.40	3 31.17	0.48	8.56	21 3 22.13	8.86	
	†33	Lacaille, 8737	C.	.49	.67	.77	.87	.08	6 .78	0.48	8.56	21 6 .73	8.88	
	34	✡ (7) —39° 23′	C.	17.70	18.92	20.10	21.19	22.26	9 20.03	0.47	8.55	21 9 11.03	8.76	
	35	Lacaille, 8790	C.	36.08	37.21	38.21	39.22	40.18	14 38.18	0.42	8.54	21 14 29.21	8.21	
	36	A. C., 21404	C.	24.25	25.26	26.19	27.31	28.25	20 26.25	0.41	8.53	21 20 17.31	8.07	
	37	✡ (7.8) —25° 56′	C.	48.91	49.96	50.87	51.82	52.80	23 50.87	0.40	8.53	21 23 41.94	8.02	
	38	Lacaille, 8839	C.	0.12	1.16	2.15	3.19	4.15	24 2.15	0.40	8.52	21 23 53.23	8.02	
	†39	A. C., 21497	C.	41.21	42.15	43.13	44.12	45.07	28 55.62	12.93	8.52	21 28 34.17	8.05	
	†40		D.	4.38	7.60	8.62	9.47	10.45						
	41	Lacaille, 8937	C.	55.45	56.56	57.53	58.52	59.53	42 57.52	0.42	8.49	21 42 48.61	8.15	
	42	B. A. C , 7632	C.	11.79	12.82	13.95	15.07	16.17	48 13.96	0.47	8.48	21 48 5.01	8.63	
	43	✡ —26° 2′	C.	49.92	50.98	51.98	53.13	54.11	55 52.02	0.40	8.47	21 55 43.15	8.04	
	44		B.	26.97	27.82	28.75	29.62	32.27						
	45	α Aquarii	C.	49.71	50.63	51.48	52.33	53.20	58 51.50	0.31	8.46	21 58 42.73	7.23	
	46		D.	10.67	13.42	14.33	15.27	16.10						
	47	Lacaille, 9052	C.	19.51	20.76	21.97	23.23	24.35	4 21.96	— 0.48	— 8.45	22 4 13.02	— 8.75	

3. Correction for semi-diameter, —65.30s.
12. Correction for semi-diameter, + 0.55s.
31. Dim.
33. Seconds not recorded on fillet.
39–40. Dim.
Azimuth cor. for Y.'s obs'ns, October 15, from λ Ursæ Minoris and α^2 Capricorni.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m.	n.	c.
h.	s.	s.	s.	s.	s.
Oct. 15, 15.8	— 9.36	0.000	- -	+ 0.064	— 0.025
22.5	— 8.41	+ 0.105	— 0.278	+ 0.197	— 0.025

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
	1		B.	18.07	18.97	19.82	20.72	23.50						
Oct. 15	2	θ Aquarii	C.	40.98	41.97	42.80	43.67	44.50	9 42.86	— 0.33	— 8.44	22 9 34.08	— 7.49	Y.
	3		D.	2.33	5.06	5.92	6.84	7.77						
	4		B.	41.16	42.08	43.07	43.87	46.67						
	5	ρ Aquarii	C.	4.21	5.12	6.00	6.86	7.70	13 6.01	0.33	8.44	22 12 57.24	7.48	
	6		D.	25.42	28.21	29.12	29.91	30.81						
	7	Lacaille, 9126	D.	26.96	29.86	30.91	31.78	32.67	17 30.44	24.95	8.43	22 16 57.05	7.96	
	8	Lacaille, 9169	C.	56.36	57.41	58.47	59.51	0.42	25 58.43	0.42	8.42	22 25 49.59	8.21	
	9		B.	1.10	1.91	2.90	3.94	6.62						
	10	η Aquarii	C.	23.91	24.77	25.71	26.57	27.40	28 25.72	0.31	8.41	22 28 17.00	7.36	
	11		D.	44.92	47.59	48.56	49.51	50.33						
	12		B.	43.36	44.36	45.38	46.37	49.63						
	13	ε Piscis Australis	C.	9.25	10.22	11.16	12.07	13.07	33 11.18	0.41	8.40	22 33 2.36	8.09	
	14		D.	32.97	35.90	36.96	37.99	38.97						
	15	Lacaille, 9256	C.	29.66	30.66	31.56	32.56	33.46	40 31.58	0.41	8.40	22 40 22.77	8.03	
	16	Lacaille, 9286	C.	47.68	48.88	50.12	51.26	52.41	44 50.07	0.48	8.38	22 44 41.20	8.54	
	17	Lacaille, 9307	E.	42.91	43.90	47.11	48.00	48.96	49 46.18	53.42	8.38	22 48 44.38	8.21	
	18		C.	21.41	22.34	23.18	24.00	24.84						
	19	81 Aquarii	D.	42.59	45.21	46.20	47.10	47.93	54 45.80	22.94	8.37	22 54 14.49	7.58	
	20		F.	5.61	6.47	9.19	10.09	10.88						
	21	β Piscium	D.	20.17	22.94	24.04	24.86	25.69	57 34.75	33.95	8.36	22 56 52.44	7.40	
	22		E.	43.07	43.91	46.75	47.63	48.48						
	23	Lacaille, 9388	C.	26.75	27.83	28.87	29.92	30.97	3 28.87	0.42	8.35	23 3 20.09	8.10	
	24		B.	46.10	46.91	47.80	48.67	51.44						
	25	γ Piscium	C.	8.83	9.76	10.57	11.39	12.21	10 10.63	0.29	8.34	23 10 2.00	7.55	
	26		D.	29.99	32.71	33.51	34.40	35.22						
	27	Lacaille, 9458	C.	28.91	29.98	30.88	31.88	32.93	16 30.92	0.43	8.33	23 16 22.15	8.10	
	28		B.	36.81	37.79	38.73	39.56	42.22						
	29	κ Piscium	C.	59.76	0.60	1.41	2.24	3.13	20 1.48	0.30	8.32	23 19 52.85	7.53	
	30		D.	20.68	23.48	24.42	25.21	26.11						
	31		B.	59.22	0.05	0.90	1.80	4.66						
	†32	Moon's 1st Limb	C.	22.31	23.24	24.10	24.97	25.88	27 24.18	0.30	8.31	23 27 15.56	- -	
	33		D.	43.79	46.64	47.53	48.38	49.21						
	34		B.	36.40	37.33	38.28	39.16	42.00						
	35	ι Piscium	C.	59.35	0.33	1.18	2.07	2.90	33 1.17	0.29	8.30	23 32 52.59	7.57	
	36		D.	20.36	23.23	24.09	25.06	25.86						
	37		B.	41.48	42.41	43.27	44.17	46.84						
	38	Weisse, 783	C.	4.20	5.17	5.97	6.87	7.71	39 6.00	0.30	8.29	23 38 57.41	7.58	
	39		D.	25.08	27.83	28.78	29.69	30.56						
	40		C.	13.35	14.23	15.15	16.00	16.91						
	41	Weisse, 870	D.	34.48	37.07	38.10	39.07	39.91	43 37.71	22.82	8.28	23 43 6.60	7.56	
	42		E.	57.47	58.41	1.10	1.97	2.88						
	43		B.	58.82	59.79	0.62	1.52	4.40						
	44	ω Piscium	C.	21.73	22.64	23.59	24.47	25.34	52 23.58	0.28	8.27	23 52 15.04	— 7.62	
	45		D.	42.88	45.69	46.64	47.43	48.20						
	46		B.	34.95	35.99	36.88	37.86	40.59						
	†47	Weisse, XXIII, 1269	C.	58.12	59.07	59.88	0.87	1.77	2 0.07	0.26	8.25	0 1 51.55	- -	
	48		D.	19.66	22.49	23.41	24.25	25.21						
	49		B.	48.73	49.67	50.60	51.54	54.37						
	†50	Weisse, 0h., 4	C.	12.08	12.93	13.85	14.81	15.71	2 13.90	— 0.26	— 8.25	0 2 5.31	- -	
	51		D.	33.31	36.37	37.28	38.17	39.11						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m.	n.	c.
h.	s.	s.	s.	s.	s.
Oct. 15, 15.8	— 9.36	0.000	- -	+ 0.064	— 0.025
22.5	— 8.41	+ 0.105	— 0.278	+ 0.197	— 0.025

32. Steady.
47. Seconds not recorded on fillet.
50. Seconds not recorded on fillet.

Oct. 15. 0h. 10m. Image east 0.12r. Clamp west.

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
	1		C.	12.44	13.41	14.25	15.20	16.23						
Oct. 18	†2	Venus's 1st Limb	D.	35.51	38.57	39.51	40.37	41.37	14 38.88	— 24.37	— 6.35	16 14 8.73	- -	N.
	3		E.	0.09	1.30	3.97	5.06	5.97						
	4		C.	0.86	1.72	2.62	3.71	4.66						
	5	α Scorpii	D.	24.12	27.14	28.21	29.11	29.97	21 15.21	12.51	6.26	16 20 56.44	— 6.59	
	6		B.	50.23	51.33	52.47	53.66	57.14						
	7	α Lyræ	C.	19.27	20.50	21.67	22.87	23.89	32 21.67	0.03	6.22	18 32 15.42	3.73	
	8		D.	46.28	49.77	50.95	51.96	53.11						
	9		B.	35.64	36.77	37.91	38.89	42.16						
	10	β Lyræ	C.	2.86	3.97	5.09	6.08	7.13	45 5.05	0.03	6.21	18 44 58.81	4.24	
	11		D.	27.97	31.17	32.36	33.34	34.48						
	12		B.	14.09	14.91	15.80	16.79	19.62						
	13	δ Aquilæ	C.	36.97	37.89	38.70	39.62	40.42	18 38.71	0.02	6.20	19 18 32.49	6.20	
	14		D.	57.92	0.62	1.53	2.43	3.37						
	15		D.	39.34	42.25	43.17	43.97	44.87						
	16	A. C., 20055	E.	3.13	4.27	6.90	7.79	8.76	46 54.44	— 35.31	6.19	19 46 12.94	7.29	
	17		B.	17.05	19.13	19.97	21.22	26.00						
	18	✱ +53° 59′	C.	55.76	57.54	58.98	0.27	1.72	55 39.76	+ 19.06	6.19	19 55 52.63	- -	
	19		C.	42.82	43.87	44.91	45.77	46.65						
	20	A. C., 20322	D.	4.61	7.48	8.43	9.38	10.23	6 8.04	— 23.31	6.19	20 5 38.54	7.27	
	21		E.	28.41	29.30	32.11	32.89	33.82						
	22	A. C., 20337	E.	37.50	38.32	41.05	41.96	42.87	7 40.34	46.57	6.18	20 6 47.59	7.28	
	23	A. C., 20339	E.	45.41	46.37	49.12	50.04	50.89	7 48.37	46.67	6.18	20 6 55.62	7.28	
	24	A. C., 20358–9	E.	20.81	21.82	24.46	25.41	26.44	9 23.79	46.96	6.18	20 8 30.65	7.36	
	25		C.	54.63	55.77	56.65	57.66	58.61						
	26	A. C., 20388	D.	16.78	19.84	20.71	21.66	22.47	11 20.25	23.62	6.18	20 10 50.44	7.41	
	27		E.	40.71	41.77	44.62	45.51	46.32						
	28		B.	16.21	17.64	18.81	19.47	21.85						
	29	Weisse, 847	C.	39.51	40.61	41.49	42.39	43.23	33 41.46	0.03	6.18	20 33 35.25	7.13	
	30		D.	0.58	3.58	4.56	5.52	6.41						
	31		B.	53.10	54.13	54.93	55.80	58.49						
	†32	✱ 13 —10° 37′	C.	16.43	17.30	18.12	19.08	20.04	38 18.15	0.03	6.18	20 38 11.94	7.18	
	33		D.	37.62	40.48	41.40	42.21	43.08						
	34		D.	7.96	10.47	11.47	12.43	13.34						
	35	Weisse, 1059	E.	31.29	32.42	34.77	35.73	36.60	42 22.65	34.25	6.18	20 41 42.22	7.20	
	†36	A. C., 21404	E.	10.84	11.69	14.50	15.65	16.61	21 13.86	50.37	6.17	21 20 17.32	8.01	
	37		B.	- -	- -	1.57	2.31	4.92						
	38	β Aquarii	C.	22.74	23.56	24.50	25.52	26.41	24 24.88	0.41	6.17	21 24 18.30	7.19	
	39		D.	43.98	46.57	47.60	48.41	49.30						
	40		B.	41.71	42.76	43.72	44.54	47.77						
	41	A. C., 21492	C.	6.97	8.27	9.23	10.01	11.11	28 9.07	0.03	6.17	21 28 2.87	7.98	
	42		D.	30.52	33.31	34.38	35.38	36.37						
	43		B.	10.66	11.81	12.81	13.58	16.19						
	44	Σ. Cat. Gen., 2611	C.	33.65	34.54	35.51	36.42	37.21	30 35.48	0.03	6.17	21 30 29.28	7.06	
	45		D.	54.87	57.48	58.34	59.18	59.95						
	46		B.	59.96	0.77	1.77	2.71	5.51						
	47	Weisse, 916	C.	22.76	23.67	24.51	25.43	26.33	38 24.57	0.03	6.17	21 38 18.38	7.09	
	48		D.	43.83	46.57	47.39	48.29	49.11						
	49	Weisse, 1033	C.	10.92	11.76	12.61	13.49	14.41	44 12.64	0.03	6.17	21 44 6.44	7.53	
	50		B.	27.88	28.82	29.76	30.73	33.66						
	51	μ Capricorni	C.	51.60	52.51	53.37	54.31	55.13	45 53.35	— 0.03	— 6.17	21 45 47.15	— 7.58	
	52		D.	13.21	15.87	16.85	17.85	18.71						

2. Correction for semi-diameter, +0.57 s.
32, 36. Recorded on fillet 1s. less throughout.
Oct. 18. *n* from Polaris.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
Oct. 18, 22.7	— 6.14	+ 0.018	- -	0.000	— 0.025

Hosted by Google

DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
	1		B.	33.84	34.84	35.77	36.76	39.47						
Oct. 18	2	29 Aquarii	C.	57.91	58.68	59.54	0.46	1.52	54 59.64	— 0.03	— 6.16	21 54 53.45	— 7.67	N.
	3		D.	19.79	22.69	23.58	24.48	25.25						
	4	Weisse, 1333	C	19.29	20.21	21.12	22.10	23.11	58 32.59	11.43	6.16	21 58 15.00	7.46	
	5		D.	40.59	43.52	44.41	45.31	46.27						
	6		B.	8.24	8.97	9.79	10.71	13.51						
	7	Weisse, 1384	C	31.32	32.21	33.12	33.90	34.81	0 33.10	0.03	6.15	22 0 26.92	7.49	
	8		D.	52.81	55.55	56.33	57.16	58.08						
	9		C.	17.59	18.61	19.49	20.39	21.27						
	10	Weisse, 13	D.	38.90	41.52	42.59	43.51	44.37	2 42.19	— 22.74	6.15	22 2 13.30	7.44	
	11		E.	2.17	2.92	5.58	6.47	7.44						
	12		A.	52.21	53.19	54.16	56.73	57.69						
	13		B.	15.35	16.38	17.20	18.17	20.81						
	14	θ Aquarii	C	38.56	39.34	40.16	41.16	41.96	9 40.20	+ 0.01	6.15	22 9 34.06	7.44	
	15		D.	59.72	2.50	3.24	4.19	5.11						
	16		E.	22.55	23.46	26.26	27.03	27.91						
	17		B.	38.61	39.43	40.31	41.21	43.99						
	18	ρ Aquarii	C.	1.63	2.47	3.30	4.22	5.13	13 3.36	— 0.03	6.15	22 12 57.19	7.44	
	19		D.	22.77	25.52	26.41	27.23	28.16						
	20		B	11.22	12.13	13.06	13.96	16.70						
	21	B. A. C., 7809	C.	34.01	34.93	35.82	36.69	37.51	17 35.81	0.03	6.15	22 17 29.64	7.29	
	22		D.	55.09	57.74	58.58	59.43	0.31						
	†23	B. A. C., 7818	C.	9.60	10.68	11.67	12.62	13.57	19 23.38	11.78	6.15	22 19 5.45	7.70	
	†24		D.	31.68	34.56	35.46	36.46	37.47						
	25	53 Aquarii	C.	10.18	11.13	12.01	13.01	13.81	19 35.53	23.51	6.15	22 19 5.87	7.70	
	26		E.	55.97	57.09	59.87	0.69	1.57						
	27		B.	58.59	59.45	0.27	1.19	3.87						
	28	η Aquarii	C.	21.22	22.19	23.11	24.06	24.87	28 23.09	0.02	6.15	22 28 16.91	7.32	
	29		D.	42.36	44.96	45.82	46.73	47.66						
	30		B.	50.13	51.07	51.86	52.76	55.47						
	31	Lalande, 44223	C.	12.99	14.09	14.88	15.77	16.65	31 14.92	0.02	6.15	22 31 8.75	7.49	
	32		D.	34.45	36.98	38.11	38.91	39.70						
	33		B.	42.69	43.61	44.52	45.42	48.18						
	34	Weisse, 761	C	5.60	6.63	7.42	8.31	9.27	36 7.48	0.02	6.14	22 36 1.32	7.49	
	35		D.	26.84	29.57	30.54	31.41	32.26						
	36	✱ +57° 47′	C.	3.44	5.58	7.19	8.91	10.47	41 7.12	0.05	6.14	22 41 0.93	6.42	
	37	B. A. C., 7990	C.	53.18	0.08	6.67	13.14	20.30	48 6.67	0.18	6.14	22 48 0.35	5.73	
	38		B	55.90	56.87	57.76	58.57	1.43						
	39	Weisse, 1203	C.	18.88	19.81	20.62	21.61	22.39	57 20.66	— 0.02	6.13	22 57 14.51	7.53	
	40		D.	40.00	42.67	43.62	44.46	45.37						
	41	π Cephei	B.	7.99	11.26	15.20	18.23	28.78	3 58.56	+ 42.22	6.13	23 3 34.65	7.16	
	42		C.	33.99	37.85	41.00	43.96	47.35						
	43		B.	53.31	54.19	55.08	55.81	58.61						
	44	φ Aquarii	C.	16.09	17.04	17.97	18.81	19.60	7 17.95	— 0.02	6.13	23 7 11.80	7.55	
	45		D.	37.37	39.92	40.91	41.80	42.79						
	46		B.	43.64	44.44	45.39	46.35	49.09						
	47	γ Piscium	C	6.42	7.41	8.31	9.11	9.88	10 8.23	0.02	6.13	23 10 2.07	7.51	
	48		D.	27.52	30.17	31.09	31.91	32.69						
	49	B. A. C., 8154	C.	41.63	42.62	43.43	44.33	45.29	16 43.46	0.03	6.13	23 16 37.30	7.60	
	50	Companion to 8154	B	19.00	19.77	20.77	21.70	24.47	16 43.89	— 0.03	— 6.13	23 16 37.73	— 7.60	
	51		D.	3.23	6.09	7.10	7.92	8.82						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
Oct. 18, 22.7	— 6.14	+ 0.018	- -	0.000	— 0.025

23–24. Double star.

Hosted by Google

DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
Oct. 18	1	Santini, 1633 - - -	B.	57.67	58.57	59.37	0.27	- -	20 58.97	+ 23.21	— 6.13	23 21 16.05	— 7.45	N.
	2		C.	28.60	29.27	30.13	30.92	31.71						
	3	Lamont, 2824 - - -	D.	49.23	52.08	52.96	53.69	54.41	32 52.49	— 22.44	6.12	23 32 23.94	7.55	
	4		E.	12.09	12.91	15.67	16.44	17.32						
	5		B.	38.89	39.83	40.85	41.72	44.39						
	6	Weisse, 783 - - -	C.	1.82	2.67	3.85	4.61	5.41	39 3.60	0.02	6.12	23 38 57.46	7.56	
	7		D.	22.85	25.43	26.43	27.22	28.09						
	8	Weisse, 817 - - -	C.	43.71	44.49	45.40	46.23	47.08	40 56.64	11.24	6.12	23 40 39.28	7.57	
	9		D.	4.66	7.40	8.31	9.16	10.00						
	10		B	50.79	51.78	52.67	53.52	56.36						
	11	Weisse, 830 - - -	C.	13.68	14.48	15.36	16.34	17.17	41 15.43	0.02	6.12	23 41 9.29	7.57	
	12		D.	34.76	37.33	38.22	39.12	39.92						
	13	B. A. C., 8336 - - -	C.	3.23	16.61	28.11	40.92	52.11	53 28.20	0.30	6.12	23 53 21.78	19.33	
	14	c^1 Piscium - - - -	D.	47.23	49.87	50.87	51.75	52.52	55 61.73	33.98	6.12	23 55 21.64	7.59	
	15		E.	10.28	11.13	13.62	14.57	15.51						
	16		B.	13.37	14.34	15.24	16.08	18.82						
	17	Neptune - - - -	C.	36.13	37.06	37.90	38.85	39.88	0 38.02	0.02	6.12	0 0 31.88	- -	
	18		D.	57.22	59.84	0.94	1.84	2.73						
	19	Weisse, 59 - - - -	C.	19.04	19.87	20.77	21.67	22.51	4 20.78	0.03	6.11	0 4 14.64	7.63	
	20		B.	25.46	26.26	27.17	28.07	30.99						
	21	Weisse, 69 - - - -	C.	48.52	49.47	50.44	51.26	52.11	4 50.31	0.03	6.11	0 4 44.17	7.63	
	22		D.	9.67	12.51	13.38	14.26	15.11						
	23		B.	35.23	36.12	37.16	37.97	40.71						
	24	35 Piscium - - - -	C.	58.08	59.17	0.11	0.90	1.81	8 0.04	— 0.03	6.11	0 7 53.90	— 7.65	
	25		D.	19.71	22.10	22.89	23.89	24.76						
	†26	B. A. C., 4150, S. P. -	C.	- -	47.00	29.70	- -	54.50	12 23.73	+ 6.44	(5.71)	12 12 24.46	+ 17.20	
	27		B.	42.76	43.67	44.62	45.54	48.27						
	28	12 Ceti - - - - -	C.	5.72	6.57	7.41	8.31	9.14	23 7.49	— 0.03	6.11	0 23 1.35	— 7.65	
	29		D.	26.79	29.50	30.41	31.37	32.22						
	30		B.	51.74	52.67	53.59	54.52	57.18						
	31	13 Ceti - - - - -	C.	14.47	15.47	16.30	17.16	18.11	28 16.37	0.03	6.11	0 28 10.23	— 7.69	
	32		D.	35.67	38.31	39.21	40.19	40.98						
	33	B. A. C., 4281, S. P. -	C.	30.16	20.60	12.08	3.43	- -	37 16.57	— 4.25	6.11	12 37 6.21	+ 9.38	
	34	B. A. C., 4298, S. P. -	C.	6.16	59.92	53.91	47.64	42.82	40 54.09	+ 0.17	6.10	12 40 48.16	4.15	
	35		B.	57.52	47.39	38.73	30.40	4.49						
	36	B. A. C., 4339, S. P. -	C.	13.23	5.15	55.96	47.06	38.08	47 55.61	0.25	6.10	12 47 49.76	10.20	
	37		D.	47.11	20.16	10.93	3.09	54.82						
	38		B.	5.31	56.21	45.98	37.87	10.91						
	39	B. A. C., 4342, S. P. -	C.	21.18	11.97	4.00	55.21	47.06	47 3.03	+ 0.69	6.10	12 47 57.63	+ 10.20	
	40		D.	55.31	- -	19.13	10.33	3.09						
	41		B.	29.87	30.73	31.71	32.51	35.27						
	42	ϵ Piscium - - - -	C	52.76	53.64	54.62	55.60	56.41	55 54.61	— 0.03	6.10	0 55 48.48	— 7.80	
	43		D.	13.96	16.62	17.62	18.51	19.32						
	44		C.	21.58	22.46	23.36	24.22	25.08						
	45	e Piscium - - - -	D.	42.62	45.40	46.30	47.18	48.00	1 45.84	22.51	6.10	1 1 17.23	7.75	
	46		E	5.57	6.43	8.97	9.85	10.66						
	†47	Polaris - - - - -	C.	24.30	2.00	36.00	12.00	44.50	9 35.76	1.00	6.10	1 9 28.66	85.53	
	48		B.	50.40	51.27	52.24	53.18	55.86						
	49	θ^1 Ceti - - - - - -	C.	13.49	14.46	15.31	16.21	16.98	17 15.29	— 0.02	— 6.10	1 17 9.16	— 7.62	
	50		D.	34.80	37.46	38.26	39.22	40.15						

26. + 0.40 s. added for difference between clock and chronograph.
47. Very steady.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m.	n.	c.
h.	s.	s.	s.	s.	s.
Oct. 18, 22.7	— 6.14	+ 0.018	- -	0.000	— 0.025

Hosted by Google

DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m s.	s.	h. m. s.	s.	
	1		B.	- -	- -	42.23	43.21	45.74						
Oct. 18	2	μ Piscium	C.	3.22	4.17	4.98	5.91	6.81	23 5.45	— 0.41	— 6.10	1 22 58.94	— 7.87	N
	3		D.	24.31	27.12	27.94	28.91	29.76						
	4	η Piscium	C.	12.10	12.96	13.87	14.92	15.79	24 13.93	0.03	6.10	1 24 7.80	8.03	
	5		B.	29.83	30.81	31.70	32.61	35.31						
	6	π Piscium	C.	52.91	53.91	54.91	55.81	56.70	29 54.92	0.03	6.10	1 29 48.79	7.96	
	7		D.	14.55	17.26	18.26	19.08	20.09						
	8		B	49.41	50.27	51.23	52.18	54.86						
	9	o Piscium	C.	12.44	13.28	14.16	15.13	16.08	38 14.27	0.03	6.10	1 38 8.14	7.94	
	10		D.	33.69	36.41	37.47	38.26	39.16						
	11	Moon's 1st Limb	C.	3.36	4.33	5.23	6.20	7.09	46 5.24	0.04	6.09	1 45 59.11	- -	
	12		B.	45.71	46.63	47.64	48.57	51.45						
	13	Moon's 2d Limb	C.	9.81	10.86	11.83	12.72	13.69	48 11.80	— 0.04	6.09	1 48 5.67	- -	
	14		D.	32.17	35.16	36.08	36.87	37.77						
	15		B.	2.46	3.71	4.66	5.67	8.71						
23	†16	Venus, 1st Limb	C.	27.62	28.77	29.66	30.65	31.67	39 29.71	+ 0.00	3.78	16 39 26.52	- -	
	17		D.	50.72	53.80	54.84	55.86	56.87						
	18	α Herculis	D.	44.28	47.17	48.26	49.13	49.91	8 59.28	— 34.75	3.77	17 8 20.76	4.89	
	19		E.	7.87	8.84	11.54	12.43	13.40						
	20.		B.	9.91	10.76	11.66	12.49	15.35						
	21	α Ophiuchi	C.	33.22	34.16	35.01	35.85	36.67	28 35.02	0.03	3.76	17 28 31.23	5.07	
	22		D.	54.73	57.47	58.43	59.33	0.27						
	23	α Lyræ	D.	43.71	47.34	48.53	49.47	50.45	33 2.25	43.11	3.74	18 32 15.40	3.71	
	24		E.	13.06	14.13	17.56	18.55	19.71						
	25		B.	33.16	34.08	35.22	36.31	39.61						
	26	β Lyræ	C.	0.36	1.30	2.36	3.58	4.47	45 2.45	0.08	3.74	18 44 58.63	4.12	
	27		D.	25.46	28.73	29.69	30.75	31.75						
	28		B.	42.38	43.27	44.18	45.13	47.99						
	29	ζ Aquilæ	C.	5.87	6.82	7.65	8.51	9.41	59 7.65	0.04	3.73	18 59 3.88	5.44	
	30		D.	27.32	30.20	31.17	31.97	32.87						
	31		B.	11.17	12.06	12.83	13.91	16.57						
	32	β Aquilæ	C.	34.09	35.07	35.93	36.81	37.58	48 35.90	— 0.02	3.71	19 48 32.17	6.13	
	33		D.	55.23	58.00	58.81	59.66	0.76						
	34		B.	9.16	9.98	10.86	11.88	14.84						
	35	A. C., 20217	C.	33.09	33.92	34.85	35.71	36.46	57 34.77	+ 0.01	3.71	19 57 31.07	— 7.21	
	36		D.	54.93	57.54	58.51	59.41	0.46						
	†37	λ Ursæ Minoris	C.	23.00	10.00	53.00	42.50	24.00	1 54.50	— 4.85	(3.30)	20 1 46.37	+ 125.32	
	38		B.	25.63	26.52	27.53	28.57	31.47						
	39	A. C., 20337	C.	49.60	50.44	51.33	52.16	53.07	6 51.25	0.00	3.70	20 6 47.55	— 7.18	
	40		D.	10.95	13.82	14.96	15.95	16.81						
	41		C	19.07	19.86	20.89	22.01	22.80						
	42	A. C., 20366	D.	41.17	43.98	45.11	45.91	46.81	9 44.48	23.47	3.70	20 9 17.31	7.26	
	43		E.	4.86	5.97	8.76	9.61	10.42						
	†44	B. A. C., 2787, S. P.	C.	9.00	58.00	47.50	35.00	- -	14 52.62	— 4.43	(3.29)	8 14 44.90	37.33	
	45		B.	37.46	38.56	39.34	40.31	43.42						
	†46	ρ Capricorni	C.	1.54	2.52	3.37	4.16	5.17	21 3.41	+ 0.01	3.70	20 20 59.72	7.37	
	47		D.	23.68	26.41	27.45	28.37	29.33						
	48		B.	46.13	46.91	47.84	48.86	51.71						
	49	B. A. C., 7044	C.	9.87	10.75	11.57	12.61	13.61	21 11.81	+ 0.01	3.70	20 21 8.13	— 7.37	
	50		D.	31.97	34.92	35.92	36.84	37.72						
	†51	B. A. C., 7184	C.	20.00	1.00	39.00	18.00	0.00	29 39.60	— 4.38	—(3.70)	20 29 31.12	+ 90.59	

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m.	n.	c.
h.	s.	s.	s.	s.	s.
Oct. 23, 19.0	— 3.73	+ 0.020	- -	— 0.080	— 0.015
23, 2.3	— 3.22	+ 0.097	- -	— 0.080	— 0.015

16. Correction for semi-diameter, +0.59 s.

37, 44, 51. +0.40 s added for difference between clock and chronograph.

46. Set B not good.

October 23. *n* from Polaris, δ Ursæ Minoris, and 51 Cephei combined.

23. Very bad night; stars extremely unsteady.

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
	1		B.	16.95	17.84	18.73	19.64	22.26						
Oct. 23	† 2	Weisse, 849 - - -	C.	40.15	40.97	41.92	42.77	43.58	33 41.93	0.00	— 3.70	20 33 38.23	— 7.06	N
	3		D.	1.71	4.20	5.17	6.12	6.97						
	† 4	Weisse, 1059 - - -	C.	43.57	44.75	45.75	46.67	47.48	41 45.64	0.00	3.69	20 41 41.95	7.13	
	5		B	17.09	18.20	19.17	20.26	23.26						
	6	32 Vulpeculæ - - - -	C.	42.84	43.91	44.92	46.06	46.88	48 44.89	— 0.06	3.69	20 48 41.14	5.62	
	7		D.	6.55	9.52	10.57	11.57	12.57						
	8		B.	15.65	16.84	17.86	18.98	22.76						
	9	61¹ Cygni - - - - -	C.	44.62	45.62	46.81	48.08	49.08	0 46.88	0.08	3.69	21 0 43.11	5.90	
	10		D.	11.21	14.65	15.81	17.09	18.16						
	11	61² Cygni - - - - -	A.	48.10	49.41	50.33	53.66	55.09	0 48.36	0.00	3.69	21 0 44.66	5.90	
	12		E.	41.67	42.85	46.54	47.45	48.47						
	†13	Polaris - - - - -	C.	23.00	4.00	39.00	10.00	45.00	9 36.20	3.80	(2.93)	1 9 29.47	85.76	
	14		B.	47.77	48.62	49.48	50.50	53.27						
	15	θ¹ Ceti - - - - -	C.	10.81	11.86	12.72	13.64	14.46	17 12.65	0.00	3.32	1 17 9.33	7.64	
	16		D.	32.15	34.82	35.63	36.53	37.57						
	17		B.	45.45	46.52	47.48	48.37	51.27						
	18	η Piscium - - - -	C.	9.16	10.14	11.08	11.83	12.81	24 11.02	0.04	3.31	1 24 7.67	— 8.07	
	19		D.	30.86	33.66	34.67	35.56	36.41						
	20		A.	0.41	1.54	2.60	5.71	6.61						
	21		B.	26.04	26.99	27.98	28.97	32.11						
	22	Moon's 2d Limb - -	C.	51.38	52.60	53.61	54.52	55.42	9 53.49	0.02	2.85	6 9 50.62	- -	
	23		D.	14.75	17.97	18.97	19.96	20.87						
	24		E.	40.39	41.46	44.47	45.56	46.43						
	25	δ Ursæ Minoris, S. P. -	C.	7.50	54.50	40.00	- -	- -	16 54.00	13.63	2.84	18 16 37.53	+ 51.73	
	26		C.	46.12	47.03	47.94	48.81	49.82						
	27	γ Geminorum - - -	D.	8.21	11.06	11.93	12.81	13.67	30 11.42	23.41	2.82	6 29 45.19	— 7.97	
	28		E.	31.90	32.87	35.67	36.51	37.47						
	29	51 Cephei - - - - -	C.	19.00	40.00	56.00	19.50	34.00	34 57.70	— 1.90	2.81	6 34 52.99	76.39	
	30		B.	42.18	43.00	43.92	44.91	47.83						
	31	α Canis Majoris - - -	C.	5.86	6.79	7.78	8.67	9.51	39 7.78	+ 0.01	2.80	6 39 4.99	6.18	
	32		D.	27.84	30.60	31.72	32.59	33.46						
	33		B.	47.77	48.80	49.81	50.81	54.17						
	34	ε Canis Majoris - - -	C.	13.81	14.96	15.82	16.81	17.77	53 15.87	+ 0.03	2.78	6 53 13.12	— 5.49	
	35		D.	37.83	41.00	41.96	42.88	43.82						
	36		C.	56.61	58.07	58.82	59.69	0.71						
	†37	ζ Geminorum - - -	D.	19.86	22.37	23.32	24.32	25.31	57 22.93	— 24.01	2.77	6 56 56.15	- -	
	38		E.	43.83	45.08	47.79	48.61	49.55						
	39		B.	2.29	3.26	4.34	5.39	8.17						
24	40	Sun's 1st Limb - -	C	25.83	26.87	27.87	28.86	29.68	55 27.76	0.01	1.98	13 55 25.77	- -	
	41		D.	47.51	50.14	51.20	52.06	52.91						
	42		B.	14.52	15.62	16.52	17.43	20.17						
	43	Sun's 2d Limb - -	C.	37.99	38.93	39.87	40.69	41.61	57 39.85	0.01	1.98	13 57 37.86	- -	
	44		D.	59.60	2.23	3.27	4.21	5.09						
	45	ε Bootis - - - - -	C.	56.39	57.61	58.51	59.51	0.37	38 58.48	0.01	- -	- - - -	- -	
	46		B.	48.87	49.91	50.86	51.82	54.82						
	47	Mercury, Centre - -	C.	13.49	14.51	15.53	16.46	17.33	38 15.45	0.01	1.92	15 28 13.52	- -	
	48		D.	36.21	39.09	40.07	40.92	41.86						
	49		B.	6.34	7.33	8.34	9.33	12.26						
	†50	Venus, 1st Limb - -	C	31.57	32.60	33.53	34.64	35.47	44 33.51	— 0.01	— 1.88	16 44 32.25	- -	
	51		D.	54.57	57.81	58.77	59.62	0.55						

2. Southernmost of two stars.
4. Excessively faint.
13. +0.40 s. added for difference between clock and chronograph.
37. Observation unsatisfactory.
50. Correction for semi diameter, +0.63.
* This *n* has been assumed.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
Oct. 23, 2.3	— 3.22	+ 0.097	- -	— 0.080	— 0.015
24, 16.0	— 1.90	+ 0.040	- -	*0.000	— 0.010
23.1	— 1.15	+ 0.093	— 0.027	+ 0.013	— 0.011
6.4	— 0.30	+ 0.140	+ 0.097	— 0.167	— 0.011

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
	1		B.	7.83	8.69	9.62	10.62	13.36						
Oct. 24	2	α Ophiuchi	C.	31.26	32.08	32.97	33.92	34.76	28 33.02	- -	- -	- - - -	- -	N.
	3		D.	52.59	55.43	56.57	57.41	58.27						
	4		C.	31.81	32.79	33.69	34.64	35.43						
	5	β Aquilæ	D.	52.86	55.74	56.67	57.53	58.37	48 56.21	— 22.57	— 1.46	19 48 32.18	— 6.12	Y.
	6		E.	15.87	16.79	19.49	20.31	21.12						
	7	λ Ursæ Minoris	C.	15.00	3.00	47.00	37.00	20.00	1 48.40	- -	- -	- - - -	- -	
	8		B.	40.84	41.77	42.75	43.76	46.51						
	9	A. C., 20378	C.	5.07	6.02	6.91	7.86	8.77	10 6.86	0.04	1.42	20 10 5.39	7.34	
	10		D.	26.97	30.07	30.96	31.86	32.81						
	11		B.	35.17	36.16	37.22	38.12	40.88						
	12	ρ Capricorni	C.	59.22	0.09	1.10	1.96	2.83	21 1.09	0.04	1.41	20 20 59.64	7.35	
	13		D.	21.16	24.17	25.22	26.11	26.91						
	14		B.	3.46	4.37	5.39	6.37	9.57						
	15	B. A. C., 7139	C.	29.47	30.53	31.51	32.46	33.41	32 31.47	— 0.05	1.39	20 32 30.04	7.93	
	16		D.	53.36	56.60	57.54	58.56	59.52						
	17	✡ (9) —10° 37′	B.	48.04	48.90	49.81	50.75	53.61	38 1.65	+ 11.36	1.38	20 38 11.63	7.09	
	18		C.	11.29	12.18	13.08	14.00	14.84						
	†19	✡ (9.10) —10° 29′	D.	46.08	48.91	49.87	50.76	51.77	38 49.48	— 22.84	1.38	20 38 25.25	7.09	
	20	Lacaille, 8619	B.	54.70	55.61	56.52	57.59	0.88	47 23.51	0.05	1.37	20 47 22.09	8.12	
	21		D.	46.12	49.39	50.48	51.41	52.36						
	22	✡ (7) —32° 2′	C.	26.21	27.33	28.31	29.36	30.42	47 28.33	0.05	1.37	20 47 26.91	8.12	
	23		B.	22.06	23.12	24.08	25.13	28.36						
	24	1 Piscis Australis	C.	49.07	50.09	51.16	52.20	53.26	52 51.25	0.05	1.36	20 52 49.84	8.17	
	25		D.	14.07	17.51	18.56	19.51	20.54						
	26		C.	23.94	25.09	26.08	27.13	28.16						
	27	Lacaille, 8667	D.	50.48	53.90	54.97	56.05	57.17	56 54.44	28.41	1.37	20 56 24.66	8.47	
	28		E.	19.21	20.13	23.76	24.79	25.73						
	29		B.	51.11	52.19	53.27	54.41	58.13						
	30	B. A. C., 7349	C.	21.14	22.31	23.43	24.74	25.71	3 23.46	0.05	1.34	21 3 22.07	8.67	
	31		D.	48.87	52.51	53.60	54.71	55.78						
	32	Lacaille, 8742	C.	10.77	11.87	12.92	14.11	14.95	7 12.92	0.05	1.34	21 7 11.53	8.41	
	33	Lacaille, 8769	C.	44.82	45.85	46.88	47.97	48.86	10 46.88	0.05	1.33	21 10 45.50	8.01	
	34		B.	27.71	28.76	29.86	31.07	34.53						
	35	Lacaille, 8791	C.	56.57	57.94	58.87	59.94	1.08	14 58.92	0.05	1.32	21 14 57.54	8.50	
	36		D.	23.27	26.97	28.00	29.08	30.14						
	37		C.	15.52	16.77	17.83	18.98	20.07						
	38	Lacaille, 8824	D.	44.66	48.57	49.90	51.11	52.20	21 49.29	31.56	1.31	21 21 16.42	8.92	
	39		E.	16.78	18.22	21.62	22.94	24.22						
	40		B.	8.09	9.07	9.97	10.97	14.05						
	41	A. C., 21497	C.	33.59	34.61	35.56	36.47	37.41	28 35.49	0.05	1.30	21 28 34.14	7.90	
	42		D.	56.79	59.97	0.97	1.96	2.91						
	43		B.	1.69	2.63	3.46	4.26	7.07						
	†44	ε Pegasi	C.	24.68	25.66	26.54	27.48	28.31	37 26.56	0.04	1.29	21 37 25.23	6.71	
	45		D.	45.91	48.74	49.75	50.71	51.53						
	46		B.	30.42	31.42	32.41	33.47	36.81						
	47	Lacaille, 8934	C.	56.27	57.31	58.20	59.29	0.21	41 58.32	0.05	1.28	21 41 56.99	7.99	
	48		D.	20.08	23.25	24.28	25.24	26.11						
	49	B. A. C., 7632	C.	4.08	5.24	6.39	7.51	8.62	48 6.37	0.05	1.27	21 48 5.04	8.45	
	50		B.	27.53	28.64	29.78	30.82	34.53						
	51	B. A. C., 7647	C.	56.71	58.08	59.31	0.36	1.43	50 59.16	— 0.05	— 1.27	21 50 57.84	— 8.50	
	52		D.	23.82	27.45	28.61	29.65	30.72						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
Oct. 24, 23.1	— 1.15	+ 0.093	— 0.027	+ 0.015	— 0.011
6.4	— 0.30	+ 0.140	+ 0.097	— 0.167	— 0.011

19. Dim.
44. Unsteady.
Azimuth cor., for first part of Y.'s observations, from λ Ursæ Minoris and ρ Capricorni.
Azimuth cor., for second part of Y.'s observations, from δ Ursæ Minoris, S. P., and 51 (Hev.) Cephei.

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s	s.	h. m. s.	s.	
	1		B.	19.37	20.17	21.09	22.04	24.73						
Oct. 24	2	α Aquarii	C.	42.11	42.97	43.88	44.81	45.60	58 43.89	— 0.04	— 1.26	21 58 42.60	— 7.12	Y.
	3		D.	3.09	5.81	6.72	7.58	8.45						
	4	Lacaille, 9045	C.	13.84	15.10	16.15	17.23	18.42	3 30.56	14.42	1.25	22 3 14.89	8.47	
	5		D.	40.92	44.28	45.41	46.56	47.73						
	6		B.	10.42	11.36	12.23	13.12	15.83						
	7	θ Aquarii	C	33.63	34.53	35.38	36.21	36.98	9 35.29	0.04	1.24	22 9 34.01	7.38	
	8		D.	54.73	57.32	58.33	59.27	0.06						
	9	B. A. C., 8336	C.	0.00	13.00	26.00	39.00	51.00	53 25.80	— 2.43	1.08	23 53 22.29	18.61	
	10		B.	17.62	18.72	19.78	20.91	24.11						
	11	Lacaille, 9737	C.	45.81	46.87	47.81	48.87	49.72	1 47.79	+ 0.21	1.06	0 1 46.94	7.93	
	12		D.	11.31	14.80	15.82	16.91	17.84						
	13		B.	45.08	46.08	47.08	48.00	50.43						
	†14	γ Pegasi	C	8.53	9.62	10.41	11.41	12.33	6 10.43	0.04	1.06	0 6 9.42	— 7.65	
	15		D.	30.07	32.89	33.93	34.86	35.80						
	16	B. A. C., 4165, S. P.	C.	39.00	6.00	34.00	59.00	30.00	13 33.60	6.82	1.05	12 13 39.38	+ 37.85	
	17		B.	37.62	38.58	39.43	40.38	43.18						
	18	12 Ceti	C	0.53	1.40	2.31	3.22	4.07	23 2.28	0.10	1.03	0 23 1.34	— 7.66	
	19		D.	21.35	24.22	25.08	25.94	26.85						
	20		B.	55.91	56.90	57.92	58.84	1.85						
	21	Lacaille, 203	C.	20.83	21.80	22.73	23.71	24.60	39 22.73	0.16	1.01	0 39 21.88	7.65	
	22		D.	43.53	46.57	47.62	48.61	49.59						
	23		B.	21.46	22.44	23.38	24.34	27.32						
	24	Lacaille, 224	C.	46.33	47.27	48.27	49.31	50.21	42 48.32	0.16	1.00	0 42 47.48	7.64	
	25		D.	9.30	12.45	13.36	14.19	15.14						
	26		B.	12.95	13.76	14.73	15.63	18.76						
	27	Lacaille, 252	C.	38.11	39.07	39.92	40.88	41.83	48 40.00	0.16	0.99	0 48 39.17	7.62	
	28		D.	1.22	4.28	5.33	6.30	7.21						
	29		B.	10.00	48.00	27.00	5.00	50.00						
	†30	Polaris	C.	28.00	5.00	41.00	17.00	50.00	9 42.20	- -	- -	- - - -	- -	
	31		D.	35.00	24.00	2.00	38.00	13.00						
	32		B.	45.16	45.92	46.91	47.84	50.61						
	33	θ^1 Ceti	C.	8.22	9.10	9.91	10.87	11.67	17 10.01	+ 0.11	0.95	1 17 9.18	7.65	
	34		D.	29.41	32.31	33.21	34.12	34.95						
	35		C.	15.67	16.74	17.58	18.41	19.21						
	36	ν Piscium	D.	36.72	39.58	40.41	41.22	41.99	34 40.01	— 22.41	0.92	1 34 16.68	7.88	
	37		E.	59.79	0.56	3.28	4.07	4.92						
	38		B.	18.82	19.66	20.48	21.49	24.30						
	39	α Orionis	C.	41.77	42.81	43.70	44.56	45.37	47 43.63	+ 0.06	0.39	5 47 43.31	7.70	
	40		D.	3.00	5.74	6.74	7.67	8.45						
	41		B.	17.72	18.57	19.50	20.42	23.30						
	†42	ν Orionis	C.	41.26	42.17	43.10	44.14	44.88	59 43.14	0.04	0.36	5 59 42.82	8.04	
	43		D.	2.87	6.07	6.86	7.72	8.57						
	44		B.	7.61	8.74	9.62	10.61	13.62						
	45	η Geminorum	C.	32.37	33.36	34.40	35.41	36.29	6 34.40	0.02	0.35	6 6 34.07	8.46	
	46		D.	55.16	58.25	59.21	0.22	1.11						
	47		B.	11.64	12.43	13.39	14.51	17.36						
	48	μ Geminorum	C.	36.26	37.20	38.09	38.97	39.86	14 38.11	+ 0.02	0.33	6 14 37.80	— 8.44	
	49		D.	58.76	1.97	2.87	3.71	4.61						
	50	δ Ursæ Minoris, S. P.	D.	32.00	15.00	0.00	44.00	58.00	22 53.80	—6 15.83	0.32	18 16 37.65	+ 52.18	
	51		B.	19.94	20.83	21.70	22.66	25.58						
	52	γ Geminorum	C.	43.59	44.66	45.40	46.39	47.34	29 45.56	+ 0.04	— 0.29	6 29 45.31	— 7.99	
	53		D.	5.61	8.62	9.48	10.41	11.25						

14, 30, and 42. Unsteady.

Oct. 24. 1*h*. 40*m*. Image east 0.06*r*. Clamp west.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m*.	*n*.	*c*.
h.	s.	s.	s.	s.	s.
Oct. 24, 6.4	— 0.30	+ 0.140	+ 0.097	— 0.167	— 0.011

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s	s.	
Oct. 24	1	51 (Hev.) Cephei	C.	24.00	42.00	58.00	17.00	33.00	34 58.80	— 3.65	— 0.28	6 34 4.87	— 76.91	Y.
	2	Lacaille, 2519	C.	40.83	41.90	42.91	43.86	44.90	50 42.88	+ 0.18	0.24	6 50 42.82	5.37	
	3		B	6.30	7.13	8.09	9.06	11.93						
	4	γ Canis Minoris	C.	30.17	31.06	31.93	32.81	33.77	57 31.91	0.13	0.23	6 57 31.82	6.24	
	5		D.	51.81	54.76	55.75	56.61	57.50						
	6		B.	53.73	54.61	55.61	56.52	59.66						
	7	Moon's 2d Limb	C.	18.78	19.68	20.78	21.67	22.65	4 20.72	0.02	0.21	7 4 20.52	- -	
	8		D.	41.78	44.96	45.91	46.82	47.72						
	9		B.	27.16	28.25	29.34	30.26	33.12						
	10	δ Geminorum	C.	51.77	52.77	53.67	54.79	55.77	11 53.80	0.02	0.19	7 14 3.62	8.05	
	11		D.	14.47	17.42	18.40	19.41	20.40						
	†12	Lacaille, 2767	C.	16.71	17.77	18.86	19.81	20.89	17 18.81	+ 0.19	0.18	7 17 18.82	5.13	
	13		B.	58.33	59.37	0.38	1.46	4.40						
	14	υ Geminorum	C.	24.11	25.27	26.28	27.14	27.91	27 26.06	0.00	0.16	7 27 25.90	8.23	
	15		D.	47.38	50.74	51.78	52.72	53.61						
	16	κ Geminorum	D.	28.82	31.86	32.96	33.90	34.77	36 44.75	— 36.99	— 0.14	7 36 7.62	8.00	
	17		E.	53.86	54.95	57.92	58.77	59.67						
25	†18	Polaris, S. P.	C.	44.50	6.50	29.00	53.00	21.00	9 30.80	- -	- -	- - - -	- -	N
	19		B	50.08	51.08	51.93	52.87	55.67						
	†20	Sun's 1st Limb	C.	13.61	14.50	15.45	16.27	17.20	59 15.39	- -	- -	- - - -	- -	
	21		D.	35.08	37.77	38.77	39.76	40.64						
	22		B.	2.23	3.12	4.16	5.10	7.85						
	†23	Sun's 2d Limb	C.	25.65	26.61	27.49	28.28	29.18	1 27.51	- -	- -	- - - -	- -	
	24		D.	47.08	50.11	51.08	51.91	52.82						
	25		B.	49.24	50.28	51.34	52.26	55.28						
27	26	✱ (7) —27° 37′	C.	14.61	15.83	16.81	17.91	18.90	52 16.87	+ 0.11	+ 3.51	7 52 20.49	5.46	Y.
	27		D.	38.36	41.48	42.57	43.58	44.63						
	28	λ Ursæ Minoris, S. P.	C.	57.00	7.00	22.00	33.00	51.00	1 22.00	- -	- -	- - - -	- -	
	29		B.	57.97	58.89	59.76	0.66	3.35						
	30	Santini, 583	C.	20.82	21.73	22.62	23.44	24.17	18 22.59	0.00	3.51	8 18 26.11	6.74	
	31		D.	41.78	44.57	45.42	46.40	47.27						
	32		B.	36.52	37.51	38.41	39.31	41.96						
	†33	Santini, 588	C.	59.35	0.27	1.12	1.93	2.86	22 1.14	+ 0.01	3.52	8 22 4.68	6.62	
	34		D.	20.29	23.09	23.97	24.82	25.68						
	35	η Cancri	E.	25.38	26.39	29.17	30.11	31.08	25 28.43	— 48.01	3.52	8 24 43.94	7.49	
	36		B	0.17	1.00	1.81	2.76	5.49						
	37	ε Hydræ	C.	23.13	24.13	24.91	25.72	26.67	39 24.86	0.01	3.53	8 39 28.38	6.77	
	38		D.	44.11	46.90	47.83	48.71	49.52						
	39		B	27.88	28.76	29.65	30.56	33.34						
	40	α Cancri	C.	51.32	52.17	52.99	53.91	54.81	50 53.03	— 0.03	3.54	8 50 56.54	6.97	
	41		D.	12.62	15.53	16.39	17.33	18.13						
	42		B.	20.03	20.91	21.83	22.76	25.47						
	43	α Hydræ	C.	43.00	43.95	44.85	45.73	46.54	20 44.86	+ 0.04	3.56	9 20 48.46	6.01	
	44		D.	4.32	7.08	7.91	8.90	9.69						
	45		C.	55.33	56.26	57.23	58.22	59.10						
	46	ε Leonis	D.	18.31	21.36	22.30	23.34	24.19	38 21.86	— 24.68	3.56	9 38 0.75	— 6.94	
	47		E.	43.36	44.37	47.28	48.23	49.07						
	48		B.	12.16	12.94	13.82	14.82	17.71						
	49	Moon's 2d Limb	C.	35.74	36.57	37.43	38.28	39.22	43 37.51	— 0.02	+ 3.57	9 43 41.06	- -	
	50		D.	57.32	0.33	1.25	2.09	2.95						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m.	n.	c.
h.	s.	s.	s.	s.	s.
Oct 27, 10.1	+ 3.58	+ 0.033	+ 0.025	— 0.192	— 0.011

12. Nebulous.
18, 20, and 23. No clock cor's available.
33. Recorded 10s. greater.

r.
Oct. 26. { Image east 0.15. Clamp west.
20h. 30m. { Image east 0.04. Clamp east.

Azimuth, Oct. 27, from Polaris, S. P., and α Virginis.

Hosted by Google

DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
	1		B.	32.30	33.27	34.21	35.09	37.92						
Oct. 27	2	α Leonis	C.	56.02	56.63	57.56	58.47	59.34	0 57.56	— 0.03	+ 3.58	10 0 1.11	— 6.36	Y.
	3		D.	17.26	19.95	20.83	21.86	22.70						
	4		B.	16.76	19.56	20.57	21.52	22.41						
	5	β Leonis	C.	55.07	55.99	56.86	57.81	58.66	41 56.91	0.04	3.63	11 42 0.50	5.60	
	6		D.	31.38	32.37	33.33	34.23	37.08						
	7		A.	14.00	38.00	3.00	16.00	36.00						
	8		B	48.00	11.00	34.00	58.00	9.00						
	9	Polaris, S. P.	C.	27.00	51.00	16.00	39.00	4.00	9 17.04	- -	- -	- - - -	- -	
	10		D.	23.00	31.00	55.00	20.00	45.00						
	11		E.	59.00	24.00	38.00	2.00	25.00						
	12		C.	49.13	50.08	50.91	51.81	52.65						
	13	α Virginis	D.	10.62	13.38	14.25	15.17	16.07	18 13.79	22.74	3.69	13 18 54.74	5.48	
	14		E	33.76	34.60	37.30	38.17	39.00						
28	15	Sun's 1st Limb	E.	28.65	29.50	31.72	32.81	33.77	11 31.29	— 46.13	3.64	2 10 48.78	- -	N
	16		B.	32.91	33.97	34.72	35.54	38.36						
	†17	Sun's 2d Limb	C.	56.26	57.30	58.37	59.35	0.31	12 58.26	0.00	3.64	14 13 1.90	- -	
	18		D.	17.95	20.80	21.81	22.71	23.55						
	19		B.	18.32	19.27	20.35	21.31	24.38						
	20	α Coronæ Borealis	C.	43.96	44.97	45.98	46.96	47.91	28 45.94	0.02	3.74	15 28 49.66	4.06	
	21		D.	7.53	10.47	11.61	12.52	13.52						
	22	α Serpentis	C	21.99	22.92	23.71	24.60	25.51	37 23.75	0.02	3.75	15 37 27.48	5.07	
	23		B.	22.41	23.27	24.27	25.20	28.00						
	†24	Mercury, 1st Limb	C.	46.87	48.09	48.93	49.86	50.83	38 48.86	0.00	3.75	15 38 52.91	- -	
	25		D.	9.54	12.41	13.47	14.37	15.32						
	26		B.	29.21	30.08	31.13	32.66	35.35						
	†27	Venus, 1st Limb	C.	54.85	55.71	56.62	57.63	58.48	4 56.62	0.00	3.86	17 4 1.11	- -	
	28		D.	18.00	20.81	21.97	22.97	23.82						
	29		B.	51.39	52.41	53.29	54.21	57.11						
	30	α Herculis	C.	14.93	15.86	16.70	17.69	18.51	8 16.79	0.02	3.86	17 8 20.63	4.82	
	31		D.	36.53	39.42	40.41	41.31	42.14						
	32		B.	2.10	3.03	3.92	4.84	7.57						
	33	α Ophiuchi	C.	25.42	26.41	27.41	28.23	29.15	28 27.30	0.02	3.89	17 28 31.17	5.00	
	34		D.	46.94	49.73	50.74	51.63	52.44						
	35		B	25.13	26.17	27.34	28.61	31.80						
	36	β Lyræ	C.	52.31	53.51	54.48	55.47	56.58	44 54.53	0.03	3.98	18 44 58.48	4.03	
	37		D.	17.47	20.72	21.81	22.78	23.83						
	38		B.	34.46	35.40	36.36	37.17	40.98						
	39	ζ Aquilæ	C.	57.91	58.86	59.74	0.67	1.54	58 59.80	0.02	4.00	18 59 3.78	5.37	
	40		D.	19.34	22.30	23.20	24.16	24.96						
	41		B.	3.71	4.51	5.47	6.36	9.13						
	42	δ Aquilæ	C	26.47	27.27	28.13	29.10	29.89	18 28.23	0.01	4.02	19 18 32.24	6.06	
	43		D.	47.41	50.09	51.22	51.98	52.77						
	44	γ Aquilæ	C.	.00	.95	.82	.65	.47	.28	11.41	4.05	.92	— 5.81	
	45		D.	.43	.32	.23	.99	.92						
	†46	λ Ursæ Minoris	C.	5.00	54.00	38.50	27.00	12.00	1 39.30	— 1.55	(3.68)	20 1 42.23	+ 132.11	
	47	A. C, 20366	C.	11.47	12.27	13.36	14.19	15.22	9 13.30	0.00	4.08	20 9 17.38	— 7.22	
	48	B. A. C., 2787, S. P.	C.	4.91	52.86	42.55	28.99	19.36	14 41.73	+ 0.35	4.09	8 14 46.17	39.21	
	49	B. A. C., 7139	C.	23.97	25.09	26.01	26.90	27.93	32 39.27	— 13.28	4.11	20 32 30.10	7.86	
	50		D.	- -	50.97	52.08	53.08	54.11						
	51	* (8.9)—28° 15′	C.	53.17	54.13	55.15	56.13	57.08	38 55.13	0.00	+ 4.12	20 38 59.25	— 7.84	

17. Limb undulating badly.
24. Correction for semi-diameter - - - - - - +0.30 s.
27. Very undulating; correction for semi-diameter +0.62 s.
46. +0.40 s. added for difference between clock and chronograph.
Azimuth, Oct. 28, from Polaris and Polaris, S. P.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate	m.	n.	c.
h.	s.	s.	s.	s.	s.
Oct. 28, 18.1	+ 3.93	+ 0.074	- -	— 0.018	— 0.011

Hosted by Google

DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s	s.	m. s	m. s.	s.	h. m. s.	s.	
	1		B.	3.13	4.04	5.13	6.10	9.13						
Oct. 28	2	☉ (8.9)—28° 10′ - -	C.	28.92	29.81	31.00	31.87	32.73	39 30.90	0.00	+ 4.12	20 39 35.02	— 7.84	N.
	3		D.	52.73	55.72	56.73	57.71	58.72						
	4	☉ —28° 6′ - - - -	B.	36.51	37.70	38.66	39.50	42.71	56 4.38	0.00	4.15	20 56 8.53	7.86	
	5		D.	26.14	29.09	30.23	31.14	32.15						
	6		B.	7.66	8.76	10.00	11.22	14.87						
	7	61¹ Cygni - - - - -	C.	36.68	37.87	38.96	39.93	41.26	0 38.96	— 0.03	4.15	21 0 43.08	5.77	
	8		D.	3.29	6.80	7.81	9.01	10.24						
	9		B.	9.36	10.21	11.21	12.22	15.31						
	10	Lacaille, 8741 - - -	C.	34.53	35.62	36.62	31.69	38.60	6 36.66	0.00	4.16	21 6 40.82	7.81	
	11		D.	58.13	1.14	2.07	3.10	4.11						
	12		C.	39.24	40.27	41.28	42.17	43.22						
	13	Lacaille, 8769 - - -	D.	3.11	6.32	7.56	8.52	9.41	11 6.96	— 25.70	4.16	21 10 45.42	7.95	
	14		E.	29.36	30.47	33.46	34.44	35.53						
	15		B.	35.30	36.37	37.37	38.33	41.26						
	16	B. A. C., 7413 - - -	C.	0.17	1.15	2.16	3.07	3.98	15 2.13	0.00	4.17	21 15 6.30	7.68	
	17		D.	23.12	25.87	27.10	27.93	28.84						
	18		B.	55.36	56.26	57.25	58.33	1.20						
	19	Lacaille, 8821 - - -	C.	21.26	22.20	23.17	24.17	25.21	19 23.21	0.00	4.18	21 19 27.39	7.91	
	20		D.	45.00	48.24	49.26	50.16	51.11						
	†21	Weisse, 609 - - -	A.	15.03	15.91	16.90	19.87	20.89	29 51.36	+ 11.26	4.34	23 30 6.96	7.50	
	†22		D.	21.91	24.33	25.32	26.35	27.07						
	23		B.	43.49	44.56	45.62	46.53	48.83						
	24	Weisse, 613 - - -	C.	6.40	7.35	8.27	9.20	10.05	30 8.31	— 0.01	4.34	23 30 12.65	7.50	
	25		D.	27.77	30.32	31.21	32.06	32.94						
	26		B.	43.47	44.28	45.37	46.17	48.97						
	27	Lamont, 2823 - - -	C.	6.51	7.37	8.21	9.08	9.96	31 8.17	0.01	4.34	23 31 12.50	7.50	
	28		D.	27.36	30.14	31.05	31.85	32.82						
	29		B.	37.13	37.94	38.93	39.81	42.77						
	30	Weisse, 749 - - -	C.	0.37	1.32	2.12	3.14	4.06	37 2.14	— 0.01	4.35	23 37 6.48	7.46	
	31		D.	21.48	24.36	25.23	26.22	27.27						
	32		B.	12.97	13.93	15.00	16.16	19.29						
	33	δ Sculptoris - - - -	C.	39.10	40.21	41.34	42.23	43.23	41 41.14	0.00	4.35	23 41 45.50	7.84	
	34		D.	2.80	6.07	7.37	8.30	9.18						
	35	ω Piscium - - - -	C.	8.62	9.51	10.40	11.26	12.24	52 10.41	0.01	4.37	23 52 14.77	7.57	
	36		C.	15.38	16.27	17.04	18.00	18.82						
	37	c¹ Piscium - - - -	D.	36.51	39.27	40.14	41.05	41.91	55 39.76	22.64	4.37	23 55 21.49	7.56	
	38		E.	59.63	0.56	3.10	3.89	4.86						
	39		B.	12.78	13.71	14.56	15.40	18.11						
	40	Neptune - - - -	C.	35.61	36.43	37.21	38.13	38.87	59 37.31	0.01	4.38	23 59 41.68	- -	
	41		D.	56.67	59.31	0.21	0.98	1.73						
	42		B.	14.81	15.81	16.89	17.70	20.34						
	43	Weisse, 69 - - - -	C.	38.11	38.96	39.72	40.51	41.37	4 39.71	— 0.01	4.38	0 4 44.08	7.61	
	44		D.	59.16	1.66	2.72	3.63	4.31						
	45		B.	10.93	11.82	12.87	13.85	16.66						
	46	β Ceti - - - - -	C.	34.85	35.77	36.84	37.93	38.95	36 36.90	0.00	4 41	0 36 41.31	— 7.67	
	47		D.	57.22	59.92	1.16	1.97	2.84						
	48	B. A. C., 4342, S. P. -	C.	10.00	3.00	54.00	44.00	35.00	47 53.20	+ 0.29	4.44	12 47 57.93	+ 10.94	
	†49	Polaris - - - - -	C.	16.00	48.00	30.00	2.00	40.00	9 27.20	— 1.24	(4.84)	1 9 30.80	— 84.78	
	†50	Polaris, S. P. - - -	C.	35.50	58.00	23.50	45.50	14.00	9 23.30	+ 1.24	+(6.32)	1 9 30.86	— 84.72	
	51	α Virginis - - - -	C.	47.20	- -	- -	- -	50.50	18 11.50	- -	- -	- - - -	- -	
	52		E.	31.80	- -	- -	- -	36.50						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m.	n.	c.
h.	s.	s.	s.	s.	s.
Oct. 28, 18.1	+ 3.93	+ 0.074	- -	— 0.018	— 0.011

21–22. Set D. not good.

49, 50. +0.40 s added for difference between clock and chronograph.

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer
				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
1861.														
Oct. 29	1	Weisse, 88	D.	35.60	38.21	39.37	40.33	41.35	6 50.23	− 34.06	+ 6.83	23 6 23.00	− 7.47	Y.
	2		E.	58.79	59.57	2.22	3.00	3.90						
	3	✡ (10) −7° 7′	E.	12.41	13.32	16.10	16.95	17.89	7 15.33	45.33	6.83	23 56 36.83	7.47	
	4		C.	53.54	54.43	55.33	56.22	56.97						
	5	γ Piscium	D.	14.52	17.31	18.17	18.92	19.81	10 17.69	22.63	6.83	23 10 1.90	7.44	
	6		E.	37.21	38.19	40.69	41.61	42.51						
	7		C.	7.51	8.51	9.38	10.35	11.13						
	8	Santini, 1633	D.	28.71	31.38	32.34	33.21	34.11	21 31.88	22.71	6.84	23 21 16.01	7.38	
	9		E.	51.41	52.38	55.11	55.92	56.80						
	10	✡ (8) +5° 16′	C.	23.61	24.60	25.43	26.37	27.23	22 25.45	0.21	6.84	23 22 32.08	7.39	
	11		B.	1.83	2.67	3.59	4.47	7.04						
	12	Weisse, 528	C.	25.47	26.26	27.20	28.16	28.95	27 27.22	0.22	6.84	23 27 33.85	7.35	
	13		D.	47.17	49.94	50.87	51.92	52.81						
	14		B.	21.20	22.02	23.08	23.91	26.70						
	15	ι Piscium	C.	44.10	45.06	45.86	46.78	47.64	32 45.90	0.20	6.84	23 32 52.53	7.49	
	16		D.	5.19	7.88	8.86	9.67	10.52						
	17		B.	26.24	27.08	27.96	28.85	31.56						
	18	Weisse, 783	C.	48.93	49.84	50.79	51.74	52.46	38 50.77	0.20	6.84	23 38 57.42	7.51	
	19		D.	9.96	12.76	13.57	14.53	15.36						
	20		B.	55.89	56.82	57.87	58.76	1.52						
	21	(a) Encke's Comet, +7° 20′	C.	18.98	19.86	20.74	21.65	22.64	43 20.77	0.21	6.84	23 43 27.41	7.49	
	22		D.	40.07	42.79	43.77	44.67	45.58						
	23	B. A. C., 8336	C.	47.00	1.00	14.00	28.00	39.00	53 13.80	1.13	6.85	23 53 19.53	17.72	
	24	Weisse XXIII, 1267	C.	41.09	42.06	42.90	43.76	44.61	1 42.88	0.20	6.85	0 1 49.54	7.59	
	25		B.	12.57	13.56	14.47	15.28	18.12						
	26	Weisse, 69	C.	35.78	36.60	37.55	38.42	39.22	4 37.52	− 0.21	6.86	0 4 44.17	− 7.60	
	27		D.	56.88	59.76	0.71	1.51	2.41						
	28	B. A. C., 4165, S. P.	C.	42.00	5.00	31.00	57.00	29.00	13 32.80	+ 2.31	6.86	12 13 41.98	+ 36.02	
	29		B.	29.95	30.86	31.71	32.66	35.41						
	30	12 Ceti	C.	52.86	53.80	54.61	55.50	56.35	22 54.63	− 0.19	6.87	0 23 1.30	− 7.65	
	31		D.	13.88	16.61	17.56	18.41	19.27						
	32		B.	52.34	53.36	54.27	55.19	57.87						
	33	Weisse, 476	C.	15.47	16.34	17.26	18.12	18.99	28 17.25	0.21	6.87	0 28 23.92	7.72	
	34		D.	36.55	39.42	40.32	41.20	42.11						
	35		B.	8.67	9.66	10.66	11.51	14.53						
	36	β Ceti	C.	32.77	33.76	34.65	35.57	36.38	36 34.68	0.18	6.88	0 36 41.37	7.66	
	37		D.	54.87	57.86	58.81	59.73	0.71						
	38		B.	59.22	0.12	1.07	1.98	4.76						
	39	B. A. C., 230	C.	22.74	23.67	24.58	25.47	26.33	42 24.56	0.19	6.88	0 42 31.26	7.64	
	40		D.	44.42	47.16	48.12	48.97	49.87						
	41	Weisse, 820	C.	36.39	37.31	38.17	39.07	39.87	48 49.35	11.41	6.88	0 48 44.82	7.72	
	42		D.	57.26	59.93	0.97	1.79	2.73						
	†43	✡ (9) +2° 1′	D.	18.55	21.57	22.42	23.31	24.17	50 33.18	33.83	6.88	0 50 6.24	7.75	
	†44		E.	41.51	42.37	45.11	45.93	46.85						
	45	Polaris	C.	11.00	48.00	23.00	1.00	33.00	9 23.20	- -	- -	- - - -	- -	
	46		B.	37.62	38.51	39.43	40.33	43.04						
	47	θ¹ Ceti	C.	0.60	1.56	2.47	3.41	4.25	17 2.49	0.19	6.90	1 17 9.20	− 7.67	
	48		D.	21.91	24.75	25.63	26.48	27.31						
	49	B. A. C., 4498, S. P.	C.	20.00	8.00	- -	- -	34.00	20 0.67	3.24	6.90	13 20 4.33	+ 20.15	
	50		B.	35.66	36.60	37.47	38.41	41.31						
	51	η Piscium	C.	59.28	0.23	1.10	2.06	2.91	24 1.12	− 0.21	+ 6.90	1 24 7.81	− 8.09	
	52		D.	20.96	23.86	24.80	25.67	26.51						

43–44. Dim.

Oct. 29. 1*h*. 40*m*. Image east 0. 25. Clamp west. (*r*.)
Azimuth cor., for Y's observations of Oct. 29, from Polaris and θ¹ Ceti.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m*.	*n*.	*c*.
h.	s.	s.	s.	s.	s.
Oct. 29, 0.4	+ 6.87	+ 0.033	− 0.188	− 0.054	− 0.011

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s	m. s.	m. s.	s.	h. m. s.	s.	
Oct. 29	1	Polaris, S. P.	C.	32.50	55.00	21.00	42.50	- -	9 37.75	— 18.13	+ 7.64	1 9 27.26	— 84.55	N.
30	2	Sun's 1st Limb	D.	47.36	50.10	51.10	51.94	52.89	18 2.01	34.74	7.75	14 18 35.02	- -	
	3		E.	10.49	11.33	13.98	14.94	15.97						
	4	Sun's 2d Limb	B.	15.39	16.35	17.22	18.19	20.97	20 40.84	0.02	7.75	14 20 48.57	- -	
	5		C.	38.92	39.94	40.87	41.78	42.71						
	6		D.	0.82	3.47	4.43	5.24	6.24						
	7	α Coronæ Borealis	B.	14.21	15.09	16.17	17.16	20.22	28 41.77	0.00	7.83	15 28 49.60	4.07	
	8		C.	40.07	40.89	41.73	42.72	43.65						
	9		D.	3.38	6.31	7.31	8.38	9.29						
	10	α Scorpii	E.	35.33	36.24	39.08	39.98	40.97	21 38.32	— 49.91	7.89	16 20 56.30	6.56	
	11	α^1 Capricorni	B.	26.70	27.54	28.47	29.34	32.16	9 28.84	+ 22.98	8.13	20 9 59.95	7.00	
	12	α^2 Capricorni	B.	50.54	51.42	52.38	53.29	56.07	10 3.57	+ 12.17	8.13	20 10 23.87	7.00	
	13		C.	14.00	15.00	- -	- -	- -						
	14	ρ Capricorni	B.	25.37	26.32	27.32	28.31	31.19	20 51.33	— 0.02	8.14	20 20 59.45	7.26	
	15		C	49.36	50.37	51.39	52.21	53.16						
	16		D.	11.55	14.41	15.35	16.32	17.31						
	17	B. A. C., 7044	B.	33.91	34.88	35.85	36.65	39.56	20 59.78	0.02	8.14	20 21 7.90	7.27	
	18		C.	57.96	58.80	59.61	0.71	1.56						
	19		D.	20.00	22.88	23.89	24.71	25.71						
	20	✪ —32° 40½′	C.	20.64	21.63	22.60	23.61	24.60	30 22.62	0.03	8.15	20 30 30.74	7.01	
	21	α Cassiopeæ	D.	- -	13.88	15.69	17.11	18.82	33 35.58	— 60.47	8.72	0 32 43.83	9.03	
	22		E.	50.07	51.42	55.87	57.32	59.21						
	†23	Polaris	C.	6.50	42.00	18.50	55.00	27.00	9 17.80	+ 0.60	(9.19)	1 9 27.59	84.49	
	24	β Arietis	B.	27.87	28.81	29.78	30.72	33.76	46 54.12	0.00	8.88	1 47 3.00	8.38	
	25		C.	52.35	53.21	54.07	54.95	56.04						
	26		D.	14.56	17.49	18.44	19.42	20.28						
	27	47 Cassiopeæ	C.	14.55	19.06	22.63	26.34	30.31	51 22.58	0.07	8.89	1 51 31.54	17.37	
	28	54 Cassiopeæ	B.	57.58	0.16	3.22	6.20	14.36	56 38.56	+ 34.32	8.90	1 57 21.78	14.40	
	29		C.	7.51	10.07	12.53	15.77	18.22						
	30	α Arietis	D.	37.81	40.61	41.74	42.74	43.60	59 53.36	— 36.46	8.91	1 59 25.81	8.57	
	31		E.	2.43	3.33	6.18	7.07	8.07						
	32	B. A. C., 700	B.	- -	35.31	37.00	38.73	- -	9 18.02	+ 0.27	8.93	2 9 27.22	11.13	
	33		C.	14 99	16.65	18.11	19.89	21.16						
	34		D.	53.00	58.00	59.61	1.15	2.71						
	35	B. A. C., 701	B.	42.83	44.20	45.86	47.64	52.52	9 27.33	0.05	8.93	2 9 36.31	11.12	
	36		C.	24.05	25.55	27.31	28.86	30.51						
	37		D.	2.22	7.08	8.92	10.40	11.96						
	38	Carrington, 347	C.	7.00	43.00	14.00	47.50	18.00	21 13.90	+ 1.05	8.95	2 21 23.90	112.27	
	39	α Ceti	B.	32.13	33.09	33.93	34.89	37.51	54 56.75	— 0.01	9.03	2 55 5.77	8.01	
	40		C	55.10	55.89	56.80	57.62	58.37						
	41		D.	16.03	18.59	19.57	20.46	21.30						
	42	B. A. C., 960	C.	- -	13.38	23.06	31.93	- -	0 22.79	+ 0.03	9.04	3 0 31.87	39.82	
	43	✪ —29° 14′	B.	2.00	2.71	3.71	4.65	7.95	3 29.90	— 0.02	9.05	3 3 38.93	6.94	
	44		C.	27.62	28.91	29.97	30.91	31.76						
	45		D.	52.07	55.00	56.06	57.08	58.04						
	46	✪ —29° 14′	B.	- -	21.05	21.97	23.00	26.13	3 48.07	— 0.22	9.05	3 3 56.90	6.94	
	47		C.	45.68	46.69	47.61	48.61	49.57						
	48		D.	9.80	13.00	13.86	14.91	16.17						
	49	60 Arietis	B.	40.77	41.87	42.82	43.87	46.81	12 8.02	0.00	+ 9.07	3 12 17.09	— 8.96	
	50		C.	6.00	7.11	7.99	8.93	9.99						
	51		D.	29.23	32.35	33.22	34.17	35.12						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s	s.
Oct. 30, 18.1	+ 8.00	+ 0.064	- -	+ 0.028	— 0.011
30, 0.5	+ 8.71	+ 0.132	- -	- -	- -

23. +0.40 (s.) added for difference between clock and chronograph.
Azimuth, Oct. 30, from Polaris and Polaris, S. P.
At 2*h*. 39*m*. 9*s*. A star S. P. was distant from 5th wire of C. by 1.94 (*r.*), approaching circle reading 269° 47½′.
At 2*h*. 47*m*. Star crossed middle wire of D, circle reading 27° 35′.

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
	1		B	44.75	46.10	47.37	48.91	53.23						
Oct. 30	2	α Persei	C.	19.96	21.21	22.47	24.00	25.48	14 22.59	+ 0.02	+ 9.07	3 14 31.68	— 10.98	N.
	3		D.	52.34	56.30	57.57	58.83	0.41						
	† 4	B. A. C., 1061	C.	23.70	39.50	52.00	5.20	17.00	21 51.48	0.25	(9.45)	3 22 1.18	58.14	
	5		B.	17.65	18.57	19.48	20.38	23.51						
	6	9 Tauri	C.	42.31	43.32	44.13	45.08	46.04	28 44.22	0.00	9.10	3 28 53.32	8.87	
	7		D.	5.06	8.08	9.00	9.97	10.80						
	8	δ Persei	C.	57.33	58.67	59.99	1.57	2.76	32 0.06	+ 0.02	9.11	3 32 9.19	11.74	
	9	16 Tauri	B.	2.11	2.99	4.04	5.05	8.31	36 29.03	0.00	9.12	3 36 38.15	8.95	
	10		D.	50.00	52.96	54.03	54.88	55.92						
	11	17 Tauri	C.	32.00	32.99	33.99	34.93	35.83	36 58.35	— 24.46	9.12	3 36 43.01	8.95	
	12		E.	19.67	20.61	23.51	24.50	25.43						
	13		B.	35.25	36.16	37.11	38.07	41.10						
	14	24 Tauri	C.	0.12	1.05	1.91	3.08	4.06	39 2.03	0.00	9.13	3 39 11.16	8.96	
	15		D.	23.15	25.80	26.86	27.97	28.81						
	16		B.	43.05	44.17	45.24	46.22	49.13						
	17	η Tauri	C.	7.57	8.88	9.80	10.85	11.75	39 9.93	0.00	9.13	3 39 19.06	8.96	
	18		D.	30.76	34.07	34.92	35.77	36.76						
	19		B.	49.00	12.50	33.00	59.00	9.00						
	†20	Polaris, S. P.	C.	30.50	55.00	20.00	41.50	7.00	9 17.57	0.76	(10.55)	1 9 27.36	84.53	
	21		D.	22.00	35.00	55.50	24.00	50.50						
	22	α Bootis	E.	55.51	56.44	59.35	0.13	1.11	9 58.51	- -	- -	- - - -	- -	
	23		D.	47.83	50.61	51.67	52.51	53.53						
31	24	Sun's 1st Limb	E.	11.42	12.20	15.34	16.19	16.92	23 2.82	— 34.73	10.28	14 22 38.37	- -	
	25		B.	7.31	8.31	9.19	10.15	13.03						
	26	Sun's 2d Limb	C.	31.12	32.11	32.99	33.84	34.71	24 32.87	+ 0.03	10.28	14 24 43.18	- -	
	27		D.	52.73	55.49	56.44	57.41	58.23						
	28	Polaris, S. P.	C.	29.50	53.00	16.50	40.00	5.00	9 16.80	- -	- -	- - - -	- -	
	29	Lalande, 45473	B.	38.37	39.34	40.30	41.29	44.07	7 52.48	+ 11.85	11.36	23 8 15.69	7.66	Y.
	30		C.	2.33	3.39	4.32	5.22	6.17						
	31		C.	48.96	49.89	50.61	51.48	52.31						
	32	γ Piscium	D.	9.77	12.45	13.47	14.23	15.26	10 13.03	— 22.52	11.36	23 10 1.87	7.41	
	33		E.	32.75	33.43	36.13	36.88	37.77						
	34		B.	16.90	17.78	18.53	19.46	22.17						
	35	κ Piscium	C.	39.72	40.61	41.56	42.37	43.24	19 41.45	0.09	11.38	23 19 52.74	7.40	
	36		D.	0.59	3.43	4.31	5.13	5.91						
	37	Weisse, 609	B.	31.35	32.22	33.09	34.00	36.76	29 56.28	0.49	11.40	23 30 7.19	7.46	
	38		D.	- -	17.77	18.64	19.51	20.36						
	39	Weisse XXIII, 613	C.	59.61	0.54	1.36	2.24	3.08	30 1.37	0.09	11.40	23 30 12.68	7.46	
	40		B.	21.29	22.29	23.20	24.09	26.86						
	41	Weisse, 783	C.	44.21	45.20	46.15	47.00	47.80	38 46.01	— 0.09	11.42	23 38 57.35	— 7.48	
	42		D.	5.30	7.88	8.71	9.71	10.54						
	43	B. A. C., 4070, S. P.	C.	46.00	31.00	17.00	3.00	50.00	57 17.40	+ 1.93	11.45	11 57 30.78	+ 6.68	
	44		C.	56.17	57 07	57.91	58.87	59.71						
	45	γ Pegasi	D.	17.61	20.54	21.51	22.45	23.21	6 21.07	— 0.12	11.47	0 6 9.29	— 7.61	
	46		E.	41.26	42.31	44.87	45.87	46.77						
	47	Weisse, 196	B.	39.00	40.90	41.72	42.60	45.36	11 53.34	+ 11.13	11.48	0 12 15.95	7.61	
	48		C.	2.88	3.72	4.64	5.47	6.36						
	49		B.	30.17	31.08	31.95	32.86	35.47						
	50	Weisse, 212	C.	52.98	53.91	54.78	55.65	56.52	12 54.79	— 0.09	+11.48	0 13 6.18	— 7.61	
	51		D.	14.06	16.76	17.67	18.51	19.46						

s.
4. +0.37 added for difference between clock and chronograph.
20 +0.40 added for difference between clock and chronograph.
Azimuth cor., October 31, from Polaris and 67 Ceti.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate	m.	n.	c.
h.	s	s	s.	s.	s.
Oct. 31, 0.9	+ 11.57	+ 0.113	— 0.078	— 0.115	— 0.011

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
Oct. 31	1	Groombridge, 67 - -	C.	42.00	54.00	4.50	15.50	26.50	23 4.50	— 1.71	+11.50	0 23 14.29	— 22.49	Y.
	2		B.	53.43	54.23	55.10	56.05	58.77						
	3	B. A. C., 147 - - -	C.	16.03	17.05	17.91	18.76	19.55	28 17.89	— 0.09	11.51	0 28 29.32	— 7.67	
	4		D.	37.12	39.76	40.71	41.51	42.38						
	5	B. A. C. 4281, S. P. -	C.	12.50	4.00	54.00	45.00	36.00	36 54.30	+ 1.19	11.53	12 37 7.02	+ 8.58	
	6	B. A. C., 240 - - -	C.	22.00	49.00	22.00	51.00	16.00	47 20.00	— 4.35	11.55	0 47 27.20	— 60.60	
	7	Polaris - - - - - -	B.	47.00	24.00	2.00	40.00	30.00	9 20.30	- -	- -	- - - -	- -	
	8		D	13.00	1.00	41.00	16.00	49.00						
	9		B.	3.21	4.06	4.90	5.75	8.31						
	10	Weisse, 100 - - -	C.	26.08	26.99	27.79	28.67	29.56	7 27.87	0.11	11.59	1 7 39.35	7.90	
	11		D	47.23	50.07	50.96	51.81	52.61						
	12		C.	22.11	23.07	23.92	24.76	25.64						
	13	Weisse, 113 - - -	D.	43.55	46.29	47.10	47.84	48.69	8 46.59	22.79	11.59	1 8 35.39	7.90	
	14		E.	6.16	7.06	10.08	10.89	11.76						
	15		B.	59.72	0.61	1.48	2.36	4.92						
	16	Weisse, 202 - - -	C.	22.63	23.56	24.37	25.16	25.97	13 24.37	0.08	11.60	1 13 35.88	7.73	
	17		D.	43.67	46.37	47.36	48.21	49.12						
	18		B.	7.30	8.23	9.30	10.13	12.84						
	19	Weisse, 299 - - -	C.	30.71	31.58	32.42	33.34	34.14	18 32.41	0.11	11.61	1 18 43.91	7.96	
	20		D.	51.86	54.67	55.67	56.60	57.38						
	21	Weisse, 732 - - -	D.	23.44	26.07	26.96	27.82	28.77	41 26.61	23.16	11.65	1 41 15.10	8.14	
	22		B.	2.77	3.66	4.50	5.43	8.19						
	23	Weisse, 807 - - -	C.	26.18	27.26	28.03	29.00	29.88	45 28.06	0.12	11.66	1 45 39.60	8.18	
	24		D.	47.82	50.67	51.58	52.45	53.43						
	25		B.	57.27	58.09	58.95	59.87	2.47						
	26	Weisse, 984 - - -	C.	19.91	20.76	21.69	22.61	23.47	55 21.72	0.09	11.67	1 55 33.29	7.92	
	27		D.	40.93	43.52	44.43	45.41	46.41						
	28		C.	24.77	25.71	26.70	27.71	28.59						
	29	Weisse, 1056 - - -	D.	46.08	48.71	49.70	50.53	51.31	59 49.14	22.53	11.68	1 59 38.29	7.93	
	30		E.	8.74	9.61	12.05	12.97	13.91						
	31		B.	58.37	59.16	59.99	0.87	3.66						
	32	Weisse, 64 - - - -	C.	21.47	22.42	23.26	24.11	25.00	5 23.37	0.12	11.69	2 5 34.95	8.24	
	33		D.	43.05	45.91	46.87	47.81	48.59						
	34		B.	31.51	32.31	33.19	34.09	36.90						
	35	67 Ceti - - - - - -	C.	54.30	55.16	56.07	57.02	58.00	9 56.12	0.07	11.70	2 10 7.75	7.71	
	36		D.	15.34	18.23	19.07	19.85	20.80						
	37		B.	21.97	22.86	23.82	24.77	27.76						
	38	B. Z., 332, 45 - - -	C.	46.12	47.11	48.00	48.90	49.91	17 47.95	0.13	11.72	2 17 59.54	8.48	
	39		D.	8.19	11.16	11.99	12.89	13.84						
	40		B.	14.81	15.56	16.49	17.41	19.99						
	†41	ζ² Ceti - - - - - -	C.	37.72	38.69	39.57	40.53	41.38	20 39.55	0.10	11.72	2 20 51.17	8.11	
	42		D.	58.99	1.74	2.67	3.51	4.24						
	43		B.	8.07	8.96	9.97	10.98	13.94						
	†44	B. Z., 391, 35 - - -	C.	32.41	33.30	34.13	35.09	35.90	25 34.18	0.13	11.73	2 25 45.78	8.51	
	45		D.	54.51	57.47	58.42	59.33	0.16						
	46		C.	57.40	58.43	59.29	0.10	0.86						
	47	γ Ceti - - - - - -	D.	18.51	21.08	21.97	22.85	23.76	36 21.64	— 22.52	11.75	2 36 10.87	7.94	
	48		E.	41.21	42.06	44.88	45.71	46.57						
Nov. 3	49	Polaris, S. P. - - -	C.	- -	- -	- -	33.00	- -	8 33.00	+ 41.98	16.36	1 0 31.34	— 83.87	N.
	50	α Bootis - - - - - -	B.	38.67	39.64	40.54	41.53	44.51	8 40.98	+ 23.80	- -	- - - -	- -	
4	51	λ Ursæ Minoris - - -	C.	43.00	31.50	14.00	4.00	47.50	1 16.00	— 4.49	+16.75	20 1 28.26	- -	

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m.	n.	c.
h.	s.	s.	s.	s.	s.
Nov. 4, 23.8	+ 17.19	+ 0.120	- -	— 0.086	— 0.011

41. Unsteady.
44. Preceded by a star of (9) mag., 1′ to n^d.

Oct. 31. 2*h.* 50*m.* Image east 0.19. Clamp west.
Azimuth, November 4, from Polaris.

Hosted by Google

DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
	1		B.	41.97	42.89	43.81	44.75	47.45						
Nov. 4	2	α^2 Capricorni	C.	5.34	6.27	7.13	8.15	8.95	10 17.19	+ 0.02	+16.76	20 10 23.97	— 6.93	N.
	3		D.	26.87	29.65	30.57	31.53	32.49						
	4		B.	16.81	17.73	18.68	19.61	22.60						
	5	ρ Capricorni	C.	40.93	41.77	42.66	43.61	44.61	20 42.73	0.02	16.77	20 20 59.52	7.19	
	6		D.	2.92	5.81	6.70	7.81	8.76						
	7		B.	25.19	26.21	27.25	27.99	31.00						
	8	B. A. C., 7044	C.	49.28	50.16	50.91	51.96	53.08	20 51.03	+ 0.13	16.77	20 21 7.93	— 7.19	
	9		D.	11.35	14.28	15.14	- -	17.21						
	10	B. A. C., 7184	C.	41.00	22.00	4.00	47.00	23.00	29 3.40	— 3.92	16.80	20 29 16.28	+ 104.59	
	11		C.	10.93	12.09	13.06	14.04	14.91						
	12	B. A. C., 7139	D.	35.12	38.16	39.26	40.20	41.29	32 38.74	25.58	16.80	20 32 29.96	— 7.73	
	13		E.	1.20	2.17	5.21	6.20	7.21						
	14		B.	54.82	55.83	57.11	58.27	1.86						
	15	61^1 Cygni	C.	23.85	24.94	26.04	27.17	28.36	0 26.08	— 0.08	16.86	21 0 42.86	5.64	
	16		D.	50.48	53.99	54.96	56.21	57.30						
	†17		A.	14.47	15.46	16.26	18.87	19.83						
	†18	Weisse, 896	E.	44.88	45.91	48.31	49.45	50.34	37 2.38	+ 0.05	16.93	21 37 19.36	6.25	
	19		B.	42.93	43.94	45.06	45.92	48.71						
	20	ε Pegasi	C.	6.27	7.27	8.13	8.97	9.76	37 8.07	— 0.03	16.93	21 37 24.98	6.57	
	21		D.	27.57	30.34	31.26	32.13	32.87						
	22		B	13.96	15.29	16.46	17.70	21.65						
	23	Lacaille, 9006	C.	43.79	45.09	46.22	47.30	48.31	55 46.16	+ 0.06	16.97	21 56 3.19	8.31	
	24		D.	10.90	14.31	16.17	17.12	18.14						
	25	α Gruis	C.	12.77	14.00	15.24	16.40	18.03	59 31.99	— 16.56	16.98	21 59 32.41	8.80	
	26		D.	44.17	47.82	49.26	50.37	51.82						
	27		B.	15.51	16.57	17.47	18.37	21.56						
	28	B. A. C., 7745	C.	40.83	41.85	42.76	43.77	44.81	5 42.83	+ 0.03	16.98	22 5 59.84	7.76	
	29		D.	4.25	7.16	8.26	9.26	10.09						
	30		B.	59.80	0.80	1.91	2.86	5.56						
	31	Weisse, 467	C.	23.17	24.11	24.93	25.79	26.81	22 24.93	0.00	17.02	22 22 41.95	7.28	
	32		D.	44.26	47.14	48.08	48.92	49.76						
	33		B.	35.58	36.21	37.09	37.82	40.77						
	34	η Aquarii	C.	57.93	58.78	59.67	0.51	1.33	27 59.79	— 0.01	17.03	22 28 16.81	7.15	
	35		D.	19.13	21.74	22.58	23.47	24.21						
	36		B.	25.79	26.64	27.49	28.41	31.16						
	†37	(*)	C.	48.83	49.75	50.61	51.46	52.32	30 50.55	0.00	17.03	22 31 7.58	7.31	
	38		D.	10.06	12.61	13.47	14.37	15.31						
	39		B.	19.25	20.17	21.18	21.94	24.75						
	40	Weisse, 761	C.	42.16	43.11	44.08	45.07	46.08	35 44.13	0.00	17.04	22 36 1.17	7.31	
	41		D.	3.51	6.32	7.21	8.13	9.00						
	42		B.	16.73	17.81	18.92	19.87	23.18						
	43	α Piscis Australis	C.	43.17	44.16	45.22	46.27	47.19	49 45.30	+ 0.04	17.06	22 50 2.40	7.93	
	44		D.	7.72	10.75	11.83	12.85	13.81						
	45		C.	55.34	56.33	57.31	58.17	59.07						
	46	Weisse, 1203	D.	16.63	19.18	20.36	21.31	22.18	57 19.87	— 22.61	17.08	22 57 14.34	7.38	
	47		E.	39.68	40.65	43.14	43.91	44.77						
	48		B.	20.11	20.99	21.97	22.93	25.60						
	49	γ Piscium	C.	43.07	43.97	44.81	45.60	46.46	9 44.78	— 0.01	17.12	23 10 1.89	7.39	
	50		D.	3.98	6.71	7.60	8.51	9.33						
	51		B.	58.77	59.61	0.49	1.38	4.41						
	52	Lalande, 45704	C.	22.91	23.80	24.80	25.71	26.64	13 24.73	+ 0.02	+17.13	23 13 41.88	— 7.61	
	53		D.	45.07	48.06	48.97	49.81	50.72						

17–18. Uncertain.
37. Observed for Weisse, 641.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
Nov. 4, 23.8	+ 17.19	+ 0.120	- -	— 0.086	— 0.011

Hosted by Google

DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s	s	m. s.	m. s.	s.	h. m. s.	s.	
	1		B	46.22	47.09	47.99	48.96	51.71						
Nov. 4	2	Weisse, 342	C.	9.52	10.43	11.39	12.22	13.11	17 11.41	— 0.03	+17.13	23 17 28.51	— 7.23	N.
	3		D.	31.36	33.82	34.81	35.85	36.71						
	4		C.	56.95	57.93	58.92	59.81	0.62						
	5	Santini, 1633	D.	18.08	20.86	21.69	22.57	23.38	21 21.33	22.52	17.14	23 21 15.95	7.32	
	6		E.	41.08	41.87	44.55	45.31	46.30						
	7		C.	53.66	54.61	55.50	56.44	57.44						
	8	Lamont, 2823	D.	14.67	17.33	18.36	19.29	20.17	31 17.94	22.41	17.16	23 31 12.69	7.43	
	9		E.	37.43	38.36	41.14	41.87	42.78						
	10		B.	24.17	24.95	26.29	27.25	30.07						
	†11	Weisse, 749	C.	47.53	48.52	49.69	50.58	51.36	36 49.35	0.02	17.17	23 37 6.49	7.40	
	12		D.	8.06	11.61	12.46	13.41	14.26						
	13		C.	38.17	39.00	39.89	40.90	41.77						
	14	Weisse, 783	D.	59.18	1.92	2.83	3.79	4.71	39 2.41	22.41	17.17	23 39 57.17	7.45	
	15		E.	21.97	22.83	25.52	26.39	27.30						
	16		B.	57.86	58.77	59.87	0.91	3.52						
	17	Weisse, 916	C.	20.83	21.81	22.60	23.57	24.33	45 22.62	0.01	17.18	23 45 39.79	7.49	
	18		D.	41.76	44.53	45.52	46.38	47.12						
	19		B.	32.94	33.88	34.83	35.75	38.38						
	20	ω Piscium	C.	55.71	56.77	57.62	58.47	59.19	51 57.63	0.02	17.20	23 51 14.81	7.53	
	21		D.	16.81	19.65	20.57	21.51	22.39						
	22		B.	39.61	40.50	41.46	42.49	44.99						
	23	c^1 Piscium	C.	2.56	3.31	4.25	5.18	6.15	55 4.35	0.02	17.20	23 55 21.53	7.51	
	24		D.	23.67	26.25	27.28	28.37	29.23						
	25	Polaris	C.	- -	45.00	12.00	53.00	21.00	9 32.75	21.48	17.36	1 9 28.63	83.75	
	26		B.	7.83	8.67	9.65	10.41	13.18						
	27	Weisse, 281	C.	30.39	31.49	32.41	33.29	34.14	17 32.41	0.00	17.37	1 17 49.78	7.71	
	28		D.	51.72	54.36	55.20	56.23	57.13						
	29		B.	21.09	21.87	22.77	23.70	26.58						
	30	Weisse, 382	C.	44.17	45.18	46.11	47.00	47.82	22 46.01	0.03	17.38	1 23 3.36	8.00	
	31		D.	5.38	8.23	9.20	10.11	10.93						
	32		B.	20.10	20.87	21.87	22.73	25.58						
	33	Weisse, 569	C.	43.10	43.98	44.90	45.90	46.75	32 45.01	0.03	17.41	1 33 2.39	8.07	
	34		D.	4.61	7.18	8.19	9.16	10.21						
	35		C.	57.74	58.58	59.35	0.18	1.14						
	36	ν Piscium	D.	18.71	21.47	22.36	23.29	24.09	34 21.91	22.50	17.41	1 34 16.82	7.94	
	37		E.	41.47	42.45	45.16	45.91	46.76						
	38		B.	10.41	11.26	12.12	12.97	15.77						
	39	Weisse, 778	C.	33.10	34.08	34.92	35.82	36.67	43 34.99	0.02	17.42	1 43 52.39	7.93	
	40		D.	54.30	56.96	57.91	58.86	59.68						
	41	β Arietis	D.	6.10	8.83	9.92	10.81	11.61	47 21.34	35.84	17.43	1 47 2.93	8.41	
	42		E.	30.41	31.17	33.92	34.87	35.79						
	43		C.	14.17	15.00	15.91	16.84	17.91						
	44	Weisse, 984	D.	35.12	37.67	38.84	39.86	40.68	55 38.49	22.45	17.44	1 55 33.48	7.94	
	45		E.	58.41	59.41	1.68	2.50	3.43						
	46	α Arietis	C.	6.51	7.63	8.51	9.31	10.17	59 20.58	12.21	17.45	1 59 25.82	8.60	
	47		D.	29.22	32.23	33.16	34.10	34.97						
	48		B.	48.50	49.62	50.46	51.27	53.88						
	†49	B. A. C., 663	C.	11.31	12.28	13.07	13.96	14.82	2 13.16	0.06	17.46	2 2 30.56	7.99	
	50		D.	27.32	30.23	31.09	31.90	32.65						
	51		B.	6.61	7.43	8.23	9.07	12.11						
	52	Weisse, 102	C.	29.40	30.21	31.07	32.00	32.73	7 31.09	— 0.02	+17.47	2 7 48.54	— 8.00	
	53		D.	50.10	53.00	53.87	54.81	55.66						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
Nov. 4, 23.8	+ 17.19	+ 0.120	- -	— 0.086	— 0.011

11. Exceedingly faint.
49. The recorded time has been conjecturally diminished 5*s*.

Hosted by Google

DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s	s.	s.	s.	s.	m. s	m. s.	s.	h. m s.	s.	
	1		B.	9.31	10.11	10.87	11.70	14.52						
Nov. 4	2	ξ^2 Ceti	C.	31.87	32.96	33.81	34.74	35.56	20 33.89	— 0.02	+17.49	2 20 51.36	— 8.16	N.
	3		D.	53.23	56.12	56.97	57.91	58.61						
	4		B	14.99	15.90	16.87	18.00	21.11						
5	5	α Piscis Australis	C.	41.38	42.36	43.29	44.39	45.37	49 43.38	0.03	19.02	22 50 2.37	7.90	Y
	6		D.	5.61	8.81	9.86	10.86	11.88						
	7		B.	27.88	28.83	29.66	30.51	33.41						
	8	ϕ Aquarii	C.	50.77	51.77	52.62	53.50	54.30	6 52.64	0.07	19.07	23 7 11.63	7.40	
	9		D.	12.05	14.71	15.59	16.54	17.43						
	10		B.	18.29	19.18	20.07	20.87	23.53						
	11	γ Piscium	C.	41.11	41.97	42.81	43.63	44.51	9 42.85	0.09	19.08	23 10 1.84	7.37	
	12		D.	2.12	4.86	5.77	6.61	7.47						
	13		B.	9.00	9.90	10.71	11.61	14.28						
	14	κ Piscium	C.	31.86	32.74	33.51	34.37	35.17	19 33.54	0.08	19.10	23 19 52.54	7.37	
	15		D.	52.71	55.47	56.38	57.27	58.08						
	16	B. A. C., 8213	C.	12.00	29.00	42.00	57.50	11.50	27 42.40	1.70	19.12	23 27 59.82	11.48	
	17		B.	52.13	53.12	54.00	54.87	57.61						
	18	82 Pegasi	C	15.42	16.23	17.17	18.00	18.85	45 17.14	0.10	19.17	23 45 36.21	7.45	
	19		D.	36.70	39.45	40.37	41.22	42.00						
	20	Rumker, 11777	C.	23.67	24.53	25.47	26.37	28.27	49 25.66	— 0.09	19.19	23 49 44.76	— 7.48	
	†21	B. A. C., 4070, S. P.	C.	40.00	25.50	12.50	58.00	45.00	57 12.20	+ 1.48	19.20	11 57 32.88	+ 6.25	
	22		C.	48.48	49.39	50.26	51.18	52.05						
	23	γ Pegasi	D.	10.13	12.92	13.73	14.73	15.57	6 13.37	— 23.24	+19.22	0 6 9.35	— 7.59	
	24		E.	33.57	34.51	37.16	37.92	38.91						
	25		B.	27.06	27.91	28.86	29.79	32.56						
7	26	γ Aquilæ	C.	50.13	51.14	52.00	52.88	53.75	39 52.00	0.03	—10.19	19 39 41.77	5.66	
	27		D.	11.46	14.27	15.20	16.06	16.92						
	28		B.	48.19	49.13	50.06	50.98	53.67						
	29	α Aquilæ	C.	11.23	12.16	13.07	13.96	14.78	44 13.08	— 0.03	10.19	19 44 2.86	5.84	
	30		D.	32.47	35.28	36.21	37.13	37.92						
	31		B.	26.51	27.43	28.42	29.38	32.33						
	†32	Moon's 1st Limb	C.	51.22	52.24	53.16	54.16	55.08	52 53.21	+ 0.04	10.19	19 52 43.07	- -	
	33		D.	14.09	17.13	18.08	19.00	20.00						
	34		B	8.86	9.81	10.75	11.61	14.36						
	35	α^2 Capricorni	C.	32.22	33.21	34.08	35.00	35.81	10 34.08	0.02	10.18	20 10 23.93	6.88	
	36		D.	53.75	56.55	57.56	58.44	59.27						
	37		B.	9.65	10.56	11.49	12.51	15.35						
	38	π Capricorni	C	33.61	34.63	35.48	36.44	37.41	19 35.57	0.04	10.18	20 19 25.43	7.16	
	39		D.	55.75	58.72	59.71	0.61	1.57						
	40		B.	43.66	44.67	45.56	46.55	49.37						
	41	ρ Capricorni	C.	7.79	8.71	9.69	10.58	11.41	21 9.62	0.04	10.18	20 20 59.48	7.14	
	42		D.	29.77	32.76	33.74	34.52	35.51						
	43		B.	56.07	57.00	57.92	58.84	1.71						
	44	υ Capricorni	C.	20.06	20.99	21.86	22.81	23.72	32 21.92	0.04	10.17	20 32 11.79	7.21	
	45		D.	42.10	45.00	45.99	46.96	47.82						
	46	ε Aquarii	C.	20.88	21.88	22.77	23.60	24.45	40 22.72	0.01	10.17	20 40 12.56	6.88	
	47	✡ (7.8) —28° 13′	C.	15.16	16.17	17.08	18.07	19.09	53 17.11	0.06	10.17	20 53 7.01	7.70	
	48	Lacaille, 8647	C	26.84	27.87	28 88	29.91	30.90	53 28.88	+ 0.06	10.17	20 53 18.78	7.70	
	49		B.	21.83	22.88	24.08	25.26	28.77						
	50	61^1 Cygni	C.	50.95	52.05	53.08	54.26	55.38	0 53.12	— 0.12	—10.16	21 0 42.84	— 5.57	
	51		D.	17.47	21.04	22.23	23.31	24.29						

21. Dim.
32. Fine observation.
Azimuth cor. from Polaris, of 7th and 8th.
r.
Nov. 5. 0*h.* 50*m.* Image east 0.16. Clamp west. Night cloudy.
At 1*h.* shortened the pendulum two divisions.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
Nov. 5, 23.4	+ 19.11	+ 0.158	— 0.071	— 0.086	— 0.011
7, 22.2	— 10.13	+ 0.023	+ 0.003	— 0.139	— 0.011

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
Nov. 7	1	61² Cygni	A.	54.22	55.39	56.56	0.02	1.25	0 54.51	— 0.02	—10.16	21 0 44.33	— 5.58	Y.
	2		E.	48.06	49.10	52.56	53.52	54.47						
	3	Lacaille, 8787	C.	45.86	46.92	48.04	49.13	- -	13 47.49	+ 0.58	10.16	21 13 37.91	7.81	
	4	Lacaille, 8790	C.	37.08	38.06	39.08	40.15	41.15	14 39.10	0.07	10.16	21 14 29.01	7.82	
	5		B	9.41	10.33	11.32	12.37	15.51						
	6	Lacaille, 8821	C.	35.36	36.28	37.29	38.31	39.23	19 37.29	0.06	10.16	21 19 27.20	7.75	
	7		D.	59.21	2.23	3.27	4.19	5.07						
	8		B.	27.67	28.72	29.82	30.73	33.77						
	9	Lacaille, 8834	C.	53.15	54.16	55.11	56.14	57.12	22 55.16	+ 0.06	10.15	21 22 45.07	— 7.67	
	10		D.	16.60	19.64	20.61	21.62	22.61						
	11	B. A. C., 7504	C.	8.50	25.50	39.00	53.00	7.00	26 38.60	— 2.27	10.15	21 26 26.17	+ 22.06	
	12		B.	49.62	50.91	52.22	53.50	57.39						
	13	B. A. C., 7538	C.	21.51	22.84	24.07	25.30	26.40	34 24.03	+ 0.12	10.15	21 34 14.01	— 8.64	
	14		D.	50.81	54.69	55.86	57.07	58.30						
	†15	Lacaille, 8911	C.	20.71	21.81	22.96	23.96	24.93	38 22.87	+ 0.08	10.15	21 38 12.81	7.99	
	16	Lacaille, 8929	D.	12.57	16.16	17.38	18.46	19.58	42 16.83	— 28.85	10.15	21 41 37.83	8.28	
	17		B.	34.60	35.53	36.57	37.66	40.99						
	18	Lacaille, 8965	C.	1.29	2.36	3.41	4.38	5.39	48 3.34	+ 0.07	10.14	21 47 53.27	7.90	
	19		D.	25.97	29.06	29.98	30.93	31.92						
	20		B	34.44	35.52	36.56	37.53	40.88						
	21	Lacaille, 8985	C.	1.27	2.37	3.35	4.34	5.36	52 3.39	0.08	10.14	21 51.53.32	7.94	
	22		D.	25.96	29.23	30.31	31.37	32.36						
	23	Weisse, 1333	B.	59.87	0.75	1.71	2.62	5.46	58 13.45	11.42	10.14	21 58 14.73	7.22	
	24		C.	22.98	23.94	24.83	25.72	26.60						
	25		B.	11.83	12.66	13.56	14.55	17.08						
	26	Weisse XXI, 1384	C.	34.98	35.98	36.82	37.74	38.55	0 36.80	0.02	10.14	22 0 26.68	7.23	
	27		D.	56.25	59.17	0.15	0.96	1.74						
	28		B.	19.21	20.05	20.97	21.81	24.51						
	29	θ Aquarii	C.	42.21	43.11	43.92	44.76	45.63	9 44.00	0.01	10.14	22 9 33.87	7.21	
	30		D	3.46	6.24	7.19	8.08	8.81						
	31		B.	42.17	43.12	44.16	45.04	47.72						
	32	ρ Aquarii	C.	5.46	6.30	7.17	8.04	8.88	13 7.17	+ 0.01	10.13	22 12 57.05	— 7.21	
	33		D.	26.59	29.46	30.36	31.13	31.97						
	34	B. A. C., 7851	C.	39.50	51.00	1.50	13.00	23.50	24 1.70	— 1.62	10.13	22 23 49.95	+ 3.80	
	35		B.	53.86	54.86	55.79	56.76	59.41						
	36	Weisse, 641	C.	17.12	18.00	18.87	19.67	20.43	31 18.85	+ 0.01	10.13	22 31 8.73	— 7.29	
	37		D.	38.36	41.04	41.99	42.84	43.73						
	38		B.	35.94	37.07	37.98	39.00	42.08						
	39	Lacaille, 9261	C.	2.08	2.96	3.87	4.91	5.81	41 3.90	0.06	10.12	22 40 53.84	7.79	
	40		D.	25.59	28.77	29.80	30.79	31.81						
	41		B.	48.77	49.68	50.72	51.77	55.00						
	42	Lacaille, 9290	C.	15.12	16.16	17.11	18.19	19.16	45 17.08	+ 0.07	10.12	22 45 7.02	7.84	
	43		D.	39.16	42.49	43.39	44.38	45.36						
	†44	Lacaille, 9307	D.	16.81	20.09	21.17	22.26	23.20	49 33.95	— 39.68	10.12	22 48 44.15	7.90	
	†45		E.	43.87	44.87	48.11	49.09	50.00						
	46		B.	29.81	30.96	32.00	33.11	36.18						
	47	Lacaille, 9333	C.	55.99	57.21	58.17	59.24	0.20	53 58.19	+ 0.07	10.12	22 53 48.14	7.82	
	48		D.	20.20	23.44	24.43	25.46	26.46						
	49		B.	8.28	9.22	10.20	10.96	13.67						
	50	Weisse, 88	C.	31.40	32.25	33.17	33.99	34.77	6 33.03	+ 0.01	—10.11	23 6 22.93	— 7.39	
	51		D.	52.25	55.11	55.90	56.73	57.61						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
Nov. 7, 22.2	— 10.13	+ 0.023	+ 0.003	— 0.139	— 0.011

15. Nebulous.
44–45. Preceded by a larger star to northward.

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s	m. s.	s.	h. m. s.	s.	
	1		B.	27.59	28.63	29.61	30.65	33.52						
Nov. 7	2	Lacaille, 9447 - - -	C.	52.57	53.61	54.54	55.51	56.45	12 54.51	+ 0.05	—10.11	23 12 44.45	— 7.67	Y.
	3		D.	15.50	18.41	19.43	20.37	21.34						
	4		B.	13.45	14.33	15.26	16.19	19.23						
	5	Weisse, 342 - - -	C.	36.80	37.84	38.76	39.70	40.60	17 38.78	— 0.04	10.11	23 17 28.63	7.13	
	6		D.	58.48	1.42	2.33	3.28	4.06						
	7	B. A. C., 8213 - - -	C.	44.00	59.00	12.00	29.00	42.00	28 13.20	2.51	10.11	23 27 0.59	10.76	
	8	Lamont, 2824 - - -	D.	52.96	55.78	56.68	57.57	58.47	33 7.46	33.62	10.10	23 32 23.72	7.43	
	9		E.	15.66	16.65	19.37	20.31	21.11						
	10		B.	42.83	43.70	44.61	45.46	48.13						
	11	Weisse, 783 - - -	C.	5.58	6.48	7.42	8.31	9.14	39 7.40	0.01	10.10	23 38 57.29	7.45	
	12		D.	26.67	29.41	30.31	31.13	31.88						
	13		B.	0.31	1.23	2.15	3.05	5.83						
	14	ω Piscium - - - -	C.	23.14	24.07	24.91	25.81	26.71	52 24.99	— 0.03	10.10	23 52 14.87	— 7.51	
	15		D.	44.21	47.05	47.94	48.76	49.69						
	16	B. A. C., 4070, S. P. -	C.	5.00	52.00	38.00	25.00	11.00	57 38.20	+ 2.38	10.09	11 57 30.48	+ 5.11	
	17	Weisse, 110 - - -	D.	55.23	57.93	58.87	59.74	0.71	8 9.75	— 33.66	10.09	0 7 26.01	— 7.57	
	18		E.	18.08	18.96	21.83	22.68	23.52						
	19		B.	1.08	2.00	3.01	3.96	6.91						
	20	Weisse, 196 - - -	C.	24.21	25.08	25.87	26.71	27.61	12 25.91	— 0.01	10.09	0 12 15.81	7.59	
	21		D.	45.16	47.87	48.83	49.75	50.61						
	22		B.	46.62	47.57	48.46	49.41	52.12						
	23	12 Ceti - - - - - -	C.	9.65	10.51	11.43	12.33	13.17	23 11.39	+ 0.01	10.08	0 23 1.31	7.62	
	24		D.	30.57	33.46	34.32	35.23	36.08						
	25		B.	43.80	44.61	45.49	46.38	- -						
	26	Weisse, 444 - - -	C.	6.87	7.77	8.71	9.63	10.58	27 8.40	+ 0.29	10.08	0 26 58.61	7.62	
	27		D.	28.25	30.79	31.76	32.71	33.61						
	28		C.	23.75	24.67	25.55	26.42	27.31						
	29	✡ (8.9) —6° 24′ - -	D.	44.76	47.67	48.56	49.41	50.26	35 48.04	— 22.55	10.08	0 35 15.41	7.63	
	30		E.	7.63	8.57	11.16	12.00	12.86						
	31		B.	48.15	49.08	50.05	50.92	53.67						
	32	Weisse, 704 - - -	C.	11.37	12.25	13.07	14.00	14.81	41 13.05	0.03	10.08	0 41 2.94	7.77	
	33		D.	32.41	34.99	36.08	37.04	37.81						
	34		B.	24.51	25.46	26.40	27.31	30.10						
	35	Weisse, 100 - - -	C.	47.72	48.61	49.51	50.42	51.31	7 49.51	0.03	10.07	1 7 39.41	7.92	
	36		D.	9.08	11.75	12.65	13.49	14.35						
	37		B.	21.32	22.21	23.09	23.97	26.71						
	†38	Weisse, 202 - - -	C.	44.33	45.26	46.09	46.89	47.77	13 46.04	0.00	10.07	1 13 35.98	7.75	
	39		D.	5.26	8.21	9.03	9.84	10.64						
	40		B.	28.93	29.88	30.77	31.73	34.27						
	41	Weisse, 299 - - -	C.	52.00	52.97	53.86	54.68	55.56	18 53.90	0.03	10.06	1 18 43.80	7.99	
	42		D.	13.37	16.37	17.20	18.04	18.86						
	43	Polaris - - - - -	B.	13.00	49.00	25.00	0.00	50.00	9 43.80	6.00	10.07	1 9 27.73	83.03	
	44		D.	37.00	27.00	4.00	39.00	14.00						
	45		B	2.13	2.94	3.82	4.87	7.68						
	46	ν Piscium - - - -	C.	25.13	26.05	26.97	27.87	28.68	34 26.89	0.02	10.06	1 34 16.81	— 7.94	
	47		D.	45.99	49.05	49.87	50.77	51.58						
	48		B.	5.32	6.36	7.31	8.26	11.21						
	49	α Bootis - - - - -	C.	29.65	30.61	31.57	32.50	33.41	9 31.53	— 0.04	- -	- - - -	- -	N.
	50		D.	51.88	54.74	55.87	56.74	57.51						
	51		B.	24.53	25.61	26.63	27.62	30.67						
Nov. 8	†52	Venus, 1st Limb - -	C.	50.16	51.24	52.17	53.13	54.08	1 52.12	+ 0.03	—10.37	18 1 42.45	- -	
	53		D.	13.51	16.55	17.66	18.67	19.53						

38. Unsteady.

52. Correction for semi-diameter, $+0.67^{s}$.

Nov. 7. 1^{h}. 45^{m} Image east 0. 13. Clamp west.
Azimuth, November 8, from Polaris.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m.	n.	c.
h.	s.	s.	s.	s.	s.
Nov. 8, 23. 4	— 10. 72	— 0. 067	- -	— 0. 087	— 0. 011

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Date.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
	1		B.	54.02	55.22	56.40	57.45	1.06						
Nov. 8	2	α Lyræ	C.	23.23	24.42	25.43	26.61	27.72	32 25.51	— 0.08	—10.40	18 32 15.03	— 3.38	N.
	3		D.	50.08	53.54	54.71	55.78	56.96						
	4		B.	9.18	10.09	11.11	11.96	14.77						
	5	α^2 Capricorni	C.	32.62	33.56	34.40	35.30	36.18	10 34.44	+ 0.01	10.51	20 10 23.94	6.88	
	6		D.	54.17	56.85	57.86	58.82	59.67						
	7		B.	44.00	44.89	45.90	46.84	49.79						
	8	ρ Capricorni	C.	8.12	9.00	9.91	10.86	11.80	21 9.96	+ 0.02	10.52	20 20 59.46	7.11	
	9		D.	30.33	33.06	34.10	35.00	35.83						
	10	✡ (8 or 9) —28° 15′	C.	7.68	8.51	9.45	10.52	11.54	39 22.34	— 12.70	10.54	20 38 59.10	7.66	
	11		D.	31.56	34.57	35.55	36.57	37.44						
	12		B.	17.42	18.42	19.43	20.43	23.61						
	13	✡ (8 or 9) —28° 10′	C.	43.09	44.26	45.20	46.21	47.22	39 45.30	+ 0.03	10.54	20 39 34.79	7.66	
	14		D.	7.19	10.22	11.27	12.27	13.26						
	15		B.	23.91	24.82	25.74	26.72	29.70						
	16	Moon's 1st Limb	C.	48.00	49.00	50.00	50.97	51.84	47 49.97	0.01	10.54	20 47 39.44	- -	
	17		D.	10.35	13.17	14.21	15.11	15.94						
	18		B.	50.97	52.00	52.98	53.99	57.32						
	19	✡ —28° 6′	C.	16.76	17.80	18.77	19.79	20.77	56 18.83	+ 0.03	10.56	20 56 8.30	7.69	
	20		D.	40.61	43.69	44.70	45.67	46.61						
	†21	B. A. C., 7508	C.	16.99	19.88	22.56	24.97	27.37	29 22.35	— 0.28	10.59	21 29 11.48	1.79	
	22		B.	35.44	36.37	37.46	38.36	41.47						
	23	Lacaille, 8890	C.	0.82	1.70	2.57	3.61	4.57	34 2.69	+ 0.03	10.59	21 33 52.13	7.65	
	24		D.	24.09	26.96	28.03	28.97	29.92						
	25		B.	43.71	41.27	39.14	36.81	30.11						
	26	Radcliffe, 2396, S. P.	C.	46.96	44.38	42.44	40.38	38.51	39 42.56	+ 0.22	10.60	9 39 32.18	10.28	
	27		D.	54.92	48.17	45.86	43.81	42.00						
	28		B.	31.00	32.00	33.00	33.96	37.00						
	29	16 Pegasi	C.	56.19	57.18	58.17	59.15	0.06	46 58.18	— 0.05	10.61	21 46 47.52	6.10	
	30		D.	19.42	22.47	23.44	24.35	25.31						
	31		B.	32.07	33.05	34.14	35.10	38.16						
	32	B. A. C., 7739	C.	57.84	58.78	59.69	0.75	1.78	4 59.82	+ 0.03	10.63	22 4 49.22	7.77	
	33		D.	21.52	24.64	25.68	26.57	27.48						
	34		B.	19.57	20.41	21.42	22.27	25.11						
	35	θ Aquarii	C.	42.67	43.57	44.42	45.37	46.21	9 44.43	0.00	10.64	22 9 33.79	7.20	
	36		D.	3.80	6.50	7.56	8.38	9.20						
	37		B.	12.37	13.26	14.25	15.08	18.30						
	38	Lacaille, 9113	C.	37.67	38.66	39.61	40.60	41.57	15 39.64	+ 0.03	10.65	22 15 29.02	— 7.72	
	39		D.	1.13	4.17	5.13	6.00	6.81						
	40	B. A. C., 7851	C.	37.97	48.80	59.97	11.55	21.70	24 0.00	— 1.18	10.65	22 23 48.17	+ 4.00	
	41		B.	3.77	4.63	5.49	6.38	9.17						
	42	Weisse, 675	C.	26.76	27.62	28.52	29.41	30.25	32 28.53	0.00	10.66	22 32 17.87	— 7.28	
	43		D.	47.86	50.69	51.61	52.47	53.33						
	44		C.	44.57	45.46	46.33	47.19	48.00						
	45	ζ Pegasi	D.	5.77	8.65	9.56	10.41	11.22	35 9.06	— 22.79	10.66	22 34 35.61	6.91	
	46		E.	28.97	29.81	32.44	33.31	34.18						
	47		B.	5.63	6.57	7.66	8.62	11.74						
	48	Lacaille, 9256	C.	31.27	32.17	33.16	34.18	35.17	40 33.18	+ 0.03	10.67	22 40 22.54	7.73	
	49		D.	54.81	57.63	58.72	59.69	0.65						
	50		B.	44.35	45.61	46.63	47.67	50.79						
	51	α Piscis Australis	C.	11.00	12.14	13.08	14.07	15.08	50 13.05	+ 0.04	—10.68	22 50 2.41	— 7.87	
	52		D.	35.41	38.36	39.49	40.51	41.50						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
Nov. 8, 23.4	— 10.72	— 0.067	- -	— 0.087	— 0.011

21. Good observation.

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s	s	
Nov. 8	1	✲ —20° 58′ - - -	C.	40.13	41.11	42.00	42.90	43.80	54 54.05	— 11.98	—10.69	22 54 31.38	— 7.60	N.
	2		D.	2.55	5.64	6.61	7.47	8.33						
	3		B.	9.35	10.41	11.59	12.44	16.83						
	4	ι Gruis - - - - -	C.	41.77	43.10	44.15	45.27	46.21	2 44.20	+ 0.08	10.70	23 2 33.58	8.34	
	5		D.	12.04	15.75	17.00	17.97	19.18						
	6		B.	47.98	48.83	49.67	50.56	53.47						
	7	γ Piscium - - - -	C.	10.67	11.59	12.42	13.33	14.19	10 12.50	— 0.01	10.71	23 10 1.78	7.35	
	8		D.	31.73	34.37	35.31	36.31	37.21						
	9		B.	26.41	27.40	28.37	29.40	32.31						
	10	Lalande, 45704 - -	C.	50.71	51.60	52.51	53.42	54.31	13 52.52	+ 0.02	10.71	23 13 41.83	7.59	
	11		D.	12.82	15.66	16.67	17.66	18.62						
	12		B.	14.10	14.90	15.86	16.72	19.53						
	13	Weisse, 342 - - -	C.	37.35	38.32	39.26	40.31	41.17	17 39.31	— 0.03	10.72	23 17 28.56	7.21	
	14		D.	59.11	1.88	2.80	3.76	4.61						
	15		B.	1.93	2.87	3.73	4.65	7.41						
	16	Santini, 1633 - - -	C.	24.66	25.72	26.62	27.50	28.31	21 26.62	0.02	10.72	23 21 15.88	7.31	
	17		D.	45.96	48.61	49.57	50.45	51.24						
	18		B.	7.87	8.87	9.76	10.71	13.31						
	19	Weisse, 458 - - -	C.	30.81	31.70	32.60	33.52	34.32	23 32.58	0.02	10.72	23 23 21.84	7.31	
	20		D.	51.79	54.57	55.42	56.33	57.15						
	21		B.	53.37	54.18	54.96	55.73	58.01						
	22	Weisse, 609 - - -	C.	15.96	16.97	17.80	18.64	19.53	30 17.77	0.01	10.73	23 30 7.03	7.41	
	23		D.	36.95	39.53	40.64	41.62	42.60						
	24		C.	16.91	17.81	18.70	19.51	20.40						
	25	Lamont, 2822 - - -	D.	37.92	40.71	41.61	42.51	43.35	31 41.19	22.42	10.73	23 31 8.04	7.41	
	26		E.	0.98	1.79	4.37	5.13	6.18						
	27	Lamont, 2823 - - -	C.	21.33	22.23	23.11	24.06	24.87	31 23.12	— 0.01	10.73	23 31 12.38	7.41	
	28		A.	2.10	3.00	4.00	6.95	8.09						
	29		B.	28.19	29.13	30.17	31.10	34.16						
	30	δ Sculptoris - - - -	C.	54.16	55.31	56.16	57.29	58.21	41 43.36	+ 12.86	10.74	23 41 45.48	7.75	
	31		D.	18.18	21.21	22.32	23.21	24.29						
	†32	B. A. C., 8336 - - -	C.	4.89	17.24	29.12	43.09	55.23	53 29.91	— 1.37	10.75	23 53 17.79	15.91	
	33		A.	19.04	19.82	20.79	23.57	24.45						
	34	Neptune - - - -	B.	41.89	42.86	43.88	44.73	47.42	58 44.04	+ 22.46	10.76	23 58 55.74	- -	
	35		C.	4.22	5.67	6.58	7.45	8.22						
	36		B.	59.73	0.57	1.83	2.83	5.97						
	37	α Andromedæ - - -	C.	25.51	26.47	27.61	28.63	29.60	1 27.62	— 0.06	10.76	0 1 16.80	— 7.59	
	38		D.	49.36	52.52	53.53	54.55	55.56						
	39	B. A. C., 4165, S. P. -	C.	4.50	29.00	56.50	23.00	52.00	14 57.00	+ 3.58	10.77	12 14 49.81	+ 31.65	
	40		B.	22.56	23.46	24.35	25.25	28.07						
	41	45 Piscium - - - -	C.	45.52	46.42	47.28	48.12	48.92	18 47.27	— 0.02	10.78	0 18 36.47	— 7.64	
	42		D.	6.56	9.32	10.27	11.08	11.93						
	43		B.	48.84	49.77	50.71	51.74	54.42						
	44	B. A. C., 137 - - -	C.	12.21	13.11	13.95	14.82	15.70	27 13.91	— 0.03	10.79	0 27 3.10	7.71	
	45		D.	33.51	36.17	37.00	37.97	38.81						
	46		B.	26.06	26.92	27.91	28.81	31.80						
	47	β Ceti - - - - -	C	50.00	51.10	52.00	53.00	53.89	36 52.02	+ 0.02	10.80	0 36 41.24	7.64	
	48		D.	12.27	15.27	16.21	17.06	17.94						
	49		B.	57.06	58.00	59.06	59.96	2.77						
	50	Lacaille, 218 - - -	C.	21.62	22.52	23.61	24.57	25.50	41 23.62	0.02	10.81	0 41 12.83	— 7.60	
	51		D.	44.42	47.36	48.27	49.28	50.27						
	52	B. A. C., 4339, S. P. -	C.	19.12	9.92	2.10	53.00	44.87	48 1.80	+ 0.98	—10.81	12 47 51.97	+ 8.76	

32. Good observation.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m.	n.	c.
h.	s.	s.	s.	s.	s.
Nov. 8, 23.4	— 10.72	— 0.067	- -	— 0.087	— 0.011

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
Nov. 8	1	B. A. C., 4342, S. P. -	C.	- -	18.32	9.92	0.94	53.00	48 5.54	+ 5.37	—10.81	12 48 0.10	+ 8.78	N.
	2	Lacaille, 319 - - -	C.	36.60	37.64	38.62	39.58	40.46	3 51.16	+ 12.54	10.83	1 3 27.79	— 7.54	
	3		D.	0.25	3.07	4.11	5.17	6.15						
	4		B.	8.00	46.00	21.00	59.50	45.50						
	† 5	Polaris - - - - - -	C.	27.00	5.00	39.50	15.00	49.00	9 39.70	— 3.92	(10.44)	1 9 25.34	82.66	
	6		D	32.00	22.00	0.50	36.00	9.50						
	7		B.	55.25	56.23	57.17	58.05	0.71						
	8	θ^1 Ceti - - - - - -	C.	18.28	19.17	20.06	20.96	21.77	17 20.10	0.00	10.85	1 17 9.25	7.66	
	9		D.	39.56	42.20	43.18	44.06	44.90						
	10	Weisse, 569 - - -	B.	48.46	49.21	50.00	50.78	53.11	33 1.79	+ 11.40	10.86	1 33 2.33	8.09	
	11		C.	11.62	12.47	13.23	14.07	14.91						
	12		B.	35.43	36.40	37.26	38.28	40.99						
	13	* +11° 24′ - - -	C.	58.80	59.77	0.70	1.60	2.42	34 0.63	— 0.03	10.86	1 33 49.74	8.10	
	14		D.	19.97	23.08	23.93	24.93	25.84						
	15		B.	0.91	1.79	2.67	3.62	6.45						
	16	Weisse, 732 - - -	C.	24.34	25.23	26.00	26.90	27.82	41 26.06	0.03	10.87	1 41 15.17	8.19	
	17		D.	45.78	48.50	49.41	50.35	51.21						
	18		B.	37.84	38.77	39.55	40.51	43.41						
	19	Weisse, 775 - - -	C.	1.28	2.30	3.20	4.06	4.91	44 3.12	0.04	10.87	1 43 52.21	8.22	
	20		D.	22.95	25.61	26.50	27.46	28.40						
	21		B.	25.26	26.11	27.08	27.91	30.94						
	22	Weisse, 807 - - -	C.	48.72	49.65	50.57	51.42	52.23	45 50.55	0.04	10.87	1 45 39.64	8.23	
	23		D.	10.36	13.20	14.06	14.95	15.87						
	24		A.	45.18	46.27	47.15	50.91	51.86						
	25		B.	10.11	10.90	12.00	12.86	15.81						
	26	α Arietis - - - - - -	C	34.77	35.75	36.63	37.56	38.55	59 36.71	0.02	10.89	1 59 25.80	8.62	
	27		D.	57.56	0.50	1.41	2.33	3.27						
	28		E.	22.31	23.23	26.00	26.96	27.90						
	29		B.	50.47	51.39	52.39	53.38	56.56						
11	30	ζ Cygni - - - - - -	C.	16.59	17.57	18.57	19.61	20.55	7 18.59	0.04	14.56	21 7 4.00	5.39	
	31		D.	40.68	43.73	44.85	45.77	46.76						
	32	Weisse, 896 - - -	C.	31.97	32.92	33.79	34.60	35.46	37 33.75	0.02	14.60	21 37 19.13	6.11	
	33		B.	14.58	15.51	16.42	17.27	20.07						
	34	ε Pegasi - - - - - -	C.	37.67	38.68	39.58	40.39	41.28	37 39.48	— 0.02	14.60	21 37 24.86	6.11	
	35		D.	58.94	1.61	2.51	3.43	4.30						
	36		B.	23.60	24.46	25.35	26.22	28.95						
	37	θ Aquarii - - - - -	C.	46.57	47.43	48.31	49.16	50.16	9 48.35	0.00	14.64	22 9 33.71	7.14	
	38		D.	7.71	10.49	11.46	12.29	13.16						
	39		B.	21.16	22.00	23.00	24.04	27.07						
	40	B. A. C., 7817 - - -	C.	46.15	47.16	47.98	48.94	49.93	18 48.04	+ 0.01	14.65	22 18 33.40	7.59	
	41		D.	9.13	11.98	13.11	13.99	14.94						
	42		B.	6.79	7.70	8.63	9.51	12.30						
	43	η Aquarii - - - - -	C.	29.65	30.47	31.26	32.17	33.05	28 31.38	— 0.01	14.66	22 28 16.71	7.05	
	44		D.	50.56	53.31	54.22	55.08	55.95						
	45		B.	22.96	23.93	24.84	25.66	28.31						
	46	Moon's 1st Limb - -	C.	46.13	47.12	47.97	48.87	49.67	12 48.00	0.03	14.72	23 12 33.25	- -	
	47		D.	7.51	10.42	11.41	12.21	12.94						
	48		B.	17.91	18.94	19.91	20.76	23.64						
	49	Weisse, 342 - - -	C.	41.41	42.37	43.21	44.20	45.00	17 43.28	0.02	14.72	23 17 28.54	7.17	
	50		D.	3.00	5.81	6.81	7.69	8.56						
	51		B.	42.81	43.67	44.66	45.57	48.32						
	52	κ Piscium - - - - -	C.	5.64	6.51	7.37	8.29	9.16	20 7.43	— 0.01	—14.72	23 19 52.71	— 7.31	
	53		D.	26.57	29.37	30.36	31.22	32.00						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
Nov. 11, 2.6	— 14.93	— 0.067	— (0.12)	— 0.042	— 0.011

5. +0.40 s added for difference between clock and chronograph.
Azimuth from Polaris and Polaris S. P.

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s	s.	
	1		B.	12.00	12.95	13.88	14.70	17.54						
Nov. 11	2	Weisse, 458 - - -	C.	34.99	35.97	36.81	37.51	38.27	23 36.65	— 0.01	—14.73	23 23 21.92	— 7.28	N.
	3		D.	55.81	58.57	59.43	0.31	1.09						
	4	Lamont, 2822 - - -	C.	20.71	21.91	22.92	23.76	24.61	31 22.78	0.01	14.73	23 31 8.04	7.38	
	5		B.	2.66	3.54	4.54	5.34	7.99						
	6	Lamont, 2823 - - -	C.	25.36	26.32	27.25	28.21	29.17	31 27.29	0.01	14.73	23 31 12.55	7.38	
	7		D.	46.58	49.26	50.19	51.08	51.88						
	8		B.	- -	- -	33.61	34.50	37.27						
	9	Weisse, 685 - - -	C.	54.71	55.67	56.54	57.40	58.21	33 56.93	0.40	14.74	23 33 41.79	7.33	
	10		D.	15.77	18.57	19.62	20.51	21.27						
	11		B.	17.60	18.38	19.23	19.97	22.76						
	†12	*a* Encke's Comet, +7° 20′	C.	40.19	41.21	42.11	42.98	43.74	43 42.16	0.01	14.75	23 43 27.40	7.40	
	13		D.	1.51	4.41	5.22	6.16	6.97						
	14	c^1 Piscium - - - -	C.	34.47	35.36	36.16	37.10	37.92	55 47.56	11.34	14.75	23 55 21.47	7.47	
	15		D.	55.65	58.46	59.32	0.19	1.00						
	16		B.	35.47	36.26	37.18	38.06	40.91						
	17	Neptune - - - -	C.	58.14	59.12	59.98	0.86	1.67	58 59.97	0.01	14.76	23 58 45.20	- -	
	18		D.	19.19	21.84	22.78	23.66	24.45						
	19		C.	29.59	30.59	31.54	32.61	33.61						
	20	*a* Andromedæ - - -	D.	53.57	56.67	57.66	58.59	59.62	1 57.11	25.48	14.76	0 1 16.87	7.59	
	21		E.	19.37	20.31	23.42	24.31	25.25						
	22		B.	36.79	37.67	38.56	39.48	42.19						
	23	Weisse, 202 - - -	C.	0.09	0.92	1.77	2.63	3.54	13 1.87	0.02	14.77	0 12 47.08	7.60	
	24		D.	21.51	24.36	25.26	26.18	27.07						
	25		B.	43.00	43.98	44.92	45.78	48.80						
	26	Weisse, 229 - - -	C.	6.51	7.43	8.36	9.21	10.00	14 8.27	0.02	14.77	0 13 53.48	7.61	
	27		D.	27.98	30.66	31.60	32.41	33.36						
	28		B.	55.19	56.16	57.10	58.08	0.77						
	†29	Weisse, 233 - - -	C.	18.68	19.67	20.42	21.22	22.07	14 20.38	0.02	14.77	0 14 5.59	7.61	
	30		D.	40.08	42.65	43.57	44.56	45.48						
	31		B.	26.61	27.53	28.44	29.33	31.98						
	32	45 Piscium - - - -	C.	49.66	50.55	51.44	52.28	53.06	18 51.37	0.02	14.78	0 18 36.57	7.62	
	33		D.	10.74	13.42	14.27	15.17	16.08						
	34		B.	51.54	52.41	53.33	54.09	56.61						
	35	12 Ceti - - - - -	C.	14.22	15.23	16.17	16.97	17.77	23 16.07	0.01	14.78	0 23 1.27	7.59	
	36		D.	35.50	37.88	38.90	39.80	40.61						
	37		B.	53.21	54.06	54.94	55.91	58.57						
	38	B. A. C., 137 - - -	C.	16.19	17.16	18.11	19.05	19.92	27 18.10	0.02	14.78	0 27 3.30	7.70	
	39		D.	37.64	40.36	41.21	42.13	43.06						
	†40	Anon. (9.10) —4° - -	C.	53.70	54.61	55.47	56.28	57.18	37 55.45	0.01	14.79	0 37 40.65	- -	
	41		B.	35.03	35.87	36.80	37.78	40.61						
	42	Weisse, 820 - - -	C.	57.91	58.76	59.57	0.47	1.28	48 59.62	— 0.01	14.81	0 48 44.80	7.69	
	43		D.	18.82	21.54	22.45	23.31	24.08						
	44		B.	14.78	15.89	16.84	17.80	20.86						
	45	Lacaille, 319 - - -	C.	40.73	41.79	42.67	43.73	44.63	3 42.59	+ 0.01	14.84	1 3 27.76	7.55	
	46		D.	4.21	7.27	8.18	9.20	10.21						
	†47	Polaris - - - - -	B.	- -	- -	22.00	59.00	48.00	10 30.66	— 50.58	(14.44)	1 9 25.23	81.44	
	†48		D.	- -	- -	5.00	38.00	12.00						
	49		B.	29.55	30.41	31.27	32.13	34.91						
	50	Weisse, 100 - - -	C.	52.49	53.42	54.31	55.17	56.00	7 54.33	— 0.02	—14.85	1 7 39.46	— 7.91	
	51		D.	13.80	16.47	17.45	18.36	19.21						

12, 29. Very faint and uncertain.
40. Observed for Thetis.
47–48. +0.40 s. added for difference between clock and chronograph.
Nov. 11. Azimuth from Polaris and Polaris, S. P.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
Nov. 11, 2.6	— 14.93	— 0.067	- -	— 0.042	— 0.011

Hosted by Google

DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
	1		B.	25.46	26.30	27.17	28.00	30.97						
Nov. 11	2	Weisse, 113 - - -	C.	48.52	49.44	50.22	51.13	51.96	8 50.28	— 0.02	—14.85	1 8 35.41	— 8.08	N.
	3		D.	9.77	12.46	13.39	14.33	15.16						
	4		B.	5.57	6.48	7.28	8.17	10.86						
	5	Weisse, 197 - - -	C.	28.34	29.27	30.08	30.90	31.73	13 30.06	0.01	14.85	1 13 15.20	7.81	
	6		D.	49.21	52.00	52.78	53.70	54.57						
	7		B.	59.19	0.21	1.13	2.05	4.41						
	8	θ^1 Ceti - - - - -	C.	22.53	23.39	24.16	25.05	25.87	17 24.16	0.01	14.85	1 17 9.30	7.65	
	9		D.	43.52	46.41	47.29	48.20	49.00						
	10		B.	2.48	3.52	4.37	5.18	8.08						
	11	Weisse, 607 - - -	C.	25.65	26.46	27.22	28.07	28.83	34 27.17	0.01	14.87	1 34 12.29	7.93	
	12		D.	46.17	48.97	49.94	50.86	51.74						
	13		B.	4.94	5.81	6.76	7.62	10.61						
	14	Weisse, 732 - - -	C.	28.24	29.27	30.18	31.07	31.90	41 30.18	0.02	14.87	1 41 15.29	8.18	
	15		D.	49.92	52.74	53.65	54.56	55.45						
	16		B.	41.78	42.75	43.67	44.52	47.39						
	17	Weisse, 775 - - -	C.	5.40	6.23	7.12	8.00	8.95	44 7.16	0.02	14.88	1 43 52.26	8.22	
	18		D.	27.07	29.83	30.72	31.55	32.37						
	19		B.	29.40	30.21	31.12	31.92	34.93						
	20	Weisse, 807 - - -	C.	52.85	53.68	54.45	55.45	56.34	45 54.61	— 0.02	14.88	1 45 39.71	8.23	
	21		D.	14.42	17.25	18.20	19.13	19.85						
	22		B.	25.40	26.38	27.36	28.76	32.85						
	23	B. A. C., 619 - - -	C.	55.58	56 73	58.11	59.12	0.34	53 58.05	+ 0.02	14.89	1 53 43.18	7.16	
	24		D.	23.81	27.48	28.54	29.61	30.74						
	25		A.	54.76	55.40	56.15	59.15	0.18						
	†26	Weisse, 1047 - - -	B.	18.16	19.00	19.92	20.76	23.84	59 20.32	+ 23.12	14.89	1 59 28.55	8.29	
	27		C.	41.83	42.70	43.47	44.28	45.18						
	28		B.	5.00	5.86	6.84	7.70	10.53						
	29	Weisse, 1043 - - -	C.	28.51	29.45	30.33	31.18	32.00	59 30.34	— 0.02	14.89	1 59 15.43	8.29	
	30		D.	50.20	53.10	53.96	54.77	55.63						
	31		C.	13.17	14.34	15.52	17.00	18.31						
	32	Arg. Z. N., 145, 126 -	D.	45.06	49.15	50.45	51.72	53.22	3 49.86	34.18	14.90	2 3 0.78	10.20	
	33		E.	19.79	21.00	25.07	26.42	27.76						
	34		C.	31.80	32.68	33.56	34.32	35.17						
	35	B. A. C., 687 - - -	D.	52.84	55.62	56.51	57.34	58.10	6 56.00	22.47	14.90	2 6 18.63	8.02	
	36		E.	15.59	16.40	19.16	20.08	20.89						
	37		B.	25.34	26.21	27.22	28.23	31.07						
	38	Weisse, 143 - - -	C.	48.98	49.76	50.66	51.63	52.52	10 50.73	0.02	14.91	2 10 35.80	8.34	
	39		D.	10.53	13.31	14.19	15.18	16.08						
	40		B.	0.30	1.10	2.08	3.14	6.11						
	41	B. Z., 27, 25 - - -	C.	24.91	25.81	26.67	27.60	28.48	19 26.75	0.03	14.91	2 19 11.80	8.71	
	42		D.	47.57	50.38	51.46	52.33	53.32						
	43		B.	13.57	14.62	15.56	16.43	18.97						
	44	B. Z., 27, 26 - - -	C.	38.25	39.10	40.00	40.90	41.83	19 40.06	0.03	14.91	2 19 25.13	8.71	
	45		D.	0.75	3.79	4.84	5.76	6.61						
	46		B.	41.41	42.40	43.28	44.22	46.91						
	47	ξ^2 Ceti - - - - -	C.	4.41	5.43	6.23	7.13	7.95	21 6.23	0.01	14.91	2 20 51.31	8.18	
	48		D.	25.57	28.37	29.24	30.05	30.84						
	49		B.	20.58	21.48	22.34	23.23	26.23						
	50	Weisse, 415 - - -	C.	43.41	44.28	45.14	46.02	46.90	25 45.23	0.01	14.91	2 25 30.31	8.05	
	51		D.	4.41	7.33	8.22	9.07	9.84						
	52		B.	49.24	50.11	51.24	51.94	54.54						
	53	Weisse, 455 - - -	C.	11.91	12.84	13.71	14.60	15.43	28 13.78	— 0.01	—14.92	2 27 58.85	— 8.07	
	54		D.	33.06	35.65	36.65	37.49	38.34						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
Nov. 11, 2.6	— 14.93	— 0.067	- -	— 0.042	— 0.011
16.0	— 15.70	0.000	- -	- -	- -

26. Observed for Weisse, 1050.

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
Nov. 11	1	β Ursæ Minoris, S. P.	C.	25.63	21.87	18.57	15.18	12.19	51 18.69	+ 0.17	—14.95	14 51 3.91	+ 5.30	N.
	2	α Ceti	D.	40.13	42.83	43.72	44.65	45.50	55 54.54	— 33.67	14.96	2 55 5.91	— 8.12	
	3		E.	2.92	3.81	6.43	7.29	8.08						
	4		B.	35.52	36.36	37.25	38.29	41.21						
	5	δ Arietis	C.	59.59	0.53	1.47	2.37	3.26	4 1.46	— 0.03	14.96	3 3 46.47	8.80	
	6		D.	21.73	24.63	25.63	26.56	27.51						
	7	Polaris, S. P.	C.	50.50	13.50	40.50	3.00	27.00	9 38.90	+ 2.53	15.65	1 9 25.78	81.28	
	8		B.	45.71	46.60	47.53	48.37	51.05						
	9	α Virginis	C.	9.00	10.00	10.72	11.52	12.41	18 10.69	0.00	15.65	13 17 55.04	5.73	
	10		D.	30.09	32.98	33.96	34.83	35.62						
	11		B.	10.73	11.72	12.74	13.61	16.57						
	12	α Bootis	C.	35.00	36.03	36.87	37.74	38.65	9 36.88	— 0.03	15.70	14 9 21.15	— 4.70	
	13		D.	57.30	0.16	1.11	2.00	2.91						
	14	β Ursæ Minoris	C.	13.11	16.22	19.78	23.53	26.20	51 19.77	0.17	15.70	14 51 3.90	+ 5.30	
	15		C.	39.13	40.16	41.11	42.13	42.97						
12	16	Sun's 1st Limb	D.	1.41	4.18	5.17	6.13	7.00	10 4.68	23.59	15.70	16 9 25.39	- -	
	17		E.	25.37	26.21	28.84	29.73	30.60						
	18		B.	31.64	32.53	33.53	34.54	37.30						
	19	Sun's 2d Limb	C.	55.60	56.56	57.47	58.44	59.41	12 57.55	0.00	15.70	16 12 41.85	- -	
	20		D.	17.80	20.89	21.62	22.51	23.45						
	21		C.	26.00	27.09	28.06	29.15	30.00						
	†22	Venus, 1st Limb	D.	49.37	52.53	53.57	54.35	55.43	22 53.07	25.01	15.70	18 22 13.05	- -	
	23		E.	15.00	16.00	18.91	19.81	20.84						
	24		B.	59.30	0.46	1.72	2.81	6.32						
	25	α Lyræ	C.	28.53	29.71	30.69	32.00	33.11	32 30.83	0.04	15.70	18 32 15.09	— 3.30	
	26		D.	55.41	58.88	0.11	1.18	2.21						
	27	Polaris, S. P.	C.	50.00	12.00	37.00	1.00	28.50	9 37.70	- -	- -	- - - -	- -	
	28		C.	31.75	32.80	33.75	34.59	35.53						
	29	τ^2 Aquarii	D.	53.48	56.36	57.37	58.16	59.04	42 56.80	23.23	15.60	22 42 17.96	7.36	Y.
	30		E.	16.81	17.77	20.61	21.60	22.35						
	31		B.	49.41	50.28	51.30	52.31	55.78						
	32	α Piscis Australis	C.	15.87	16.85	17.82	18.86	19.97	50 17.89	— 0.10	15.60	22 50 2.18	7.80	
	33		D.	40.14	43.41	44.45	45.40	46.44						
	34		B.	20.64	21.51	22.52	23.42	- -						
	†35	✡ (10) —20° 57′	C.	44.70	45.57	46.48	47.45	48.38	54 46.47	+ 0.19	15.60	22 54 31.05	7.53	
	36		D.	7.38	10.27	11.36	12.25	13.09						
	37		B.	2.52	3.47	4.39	5.45	7.94						
	38	φ Aquarii	C.	25.51	26.41	27.33	28.27	29.11	7 27.28	— 0.11	15.61	23 7 11.56	7.32	
	39		D.	46.60	49.33	50.19	50.85	51.88						
	40		B.	43.75	44.60	45.58	46.40	48.97						
	†41	κ Piscium	C.	6.57	7.51	8.31	9.21	9.98	20 8.30	0.12	15.61	23 19 52.57	7.30	
	42		D.	27.59	30.15	31.13	31.95	32.87						
	†43	Moon's 1st Limb	D.	30.18	32.97	33.87	34.78	35.71	58 33.50	22.92	15.62	23 57 54.96	- -	
	44		B.	52.74	53.73	54.62	55.51	58.49						
	45	β Arietis	C.	17.00	18.00	19.00	19.85	20.88	47 18.92	0.13	15.64	1 47 3.15	8.42	
	46		D.	39.24	42.38	43.27	44.16	45.00						
	47		B.	24.76	25.57	26.41	27.32	29.91						
	48	Weisse, 984	C.	47.37	48.21	49.02	49.87	50.69	55 49.16	0.12	15.64	1 55 33.39	7.98	
	49		D.	8.33	11.11	12.05	12.96	13.78						
	50		B.	45.77	46.71	47.56	48.41	51.07						
	†51	✡ (9) +3° 6′	C.	8.61	9.46	10.27	11.14	11.93	0 10.31	— 0.12	—15.64	1 59 54.54	— 7.99	
	52		D.	29.09	32.31	33.17	34.16	34.97						

22. Correction for semi-diameter, +0.69 s.
35. Very dim.
41. Through clouds.
43. Poor observation; through clouds.
51. Dim.

Nov. 12. 0h. 5m. Image east 0.16 r. Clamp west.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m.	n.	c.
h.	s.	s.	s.	s.	s.
Nov. 12, 25.0	— 15.63	— 0.012	— 0.108	— 0.040	— 0.011

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DATE.	Number.	OBJECT.	Set	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s	s.	s.	s	s.	m. s	m. s.	s.	h. m. s.	s.	
	1		B.	25.56	26.52	27.37	28.28	31.10						
Nov. 12	2	Weisse, —64	C.	49.14	49.99	50.79	51.79	52.61	5 50.83	— 0.13	—15.64	2 5 35.06	— 8.32	Y.
	3		D.	10.47	13.35	14.25	15.16	16.09						
	4		B.	59.34	0.16	1.14	2.03	4.99						
	5	Lalande, 4238	C.	23.07	24.16	25.12	26.10	26.93	10 25.09	0.13	15.64	2 10 9.31	8.48	
	6		D.	45.24	48.16	49.18	49.97	50.78						
	†7	Arg. Z. N., 59, 20	C.	18.39	20.50	21.97	23.77	25.73	14 22.07	0.21	15.64	2 14 6.22	12.27	
	8		B.	42.27	43.20	43.98	44.99	47.82						
	†9	ξ^2 Ceti	C.	5.34	6.11	6.97	7.85	8.77	21 7.08	0.12	15.65	2 20 51.31	8.19	
	10		D.	26.42	29.31	30.26	31.06	31.88						
	11		B.	21.34	22.21	23.07	23.98	26.77						
	12	Weisse, 415	C.	44.17	45.06	45.83	46.78	47.68	25 45.95	0.12	15.65	2 25 30.18	8.05	
	13		D.	5.36	7.82	8.77	9.69	10.66						
	14		B.	19.87	20.87	21.82	22.63	25.29						
	15	✡ (8. 9) +3° 31′	C.	42.67	43.65	44.50	45.35	46.28	27 44.56	0.12	15.65	2 27 28.79	8.07	
	16		D.	3.76	6.53	7.49	8.38	9.28						
	17		B.	1.85	2.73	3.61	4.49	7.23						
	18	Weisse, 585	C.	24.59	25.53	26.43	27.42	28.18	34 26.43	0.12	15.65	2 34 10.66	8.09	
	19		D.	45.61	48.46	49.31	50.15	50.92						
	20		C.	19.82	20.78	21.70	22.61	23.44						
	†21	α Ceti	D.	40.96	43.68	44.60	45.37	46.12	55 44.11	22.57	15.65	2 55 5.89	8.12	
	22		E.	3.81	4.61	7.20	8.07	8.89						
	23		A.	42.27	43.25	44.27	47.14	48.35						
	†24		C.	33.20	34.22	35.27	36.21	37.15						
13	25	Venus, 1st Limb	D.	56.63	59.71	0.71	1.67	2.53	27 41.42	— 6.21	16.71	18 27 19.19	- -	N.
	26		E.	22.00	22.98	25.91	26.98	27.87						
	27		A.	30.87	32.22	33.30	36.76	38.00						
	28		B.	0.31	1.45	2.66	3.85	7.33						
	29	α Lyræ	C.	29.49	30.67	31.81	32.92	33.98	32 17.42	+ 14.36	- -	- - - -	- -	
	30		D.	56.25	59.95	0 98	2.21	3.31						
	31		B.	40.9	33.3	24.9	17.4	54.5						
	†32	B. A. C., 3528, S. P.	C.	26.6	- -	11.5	3.5	57.0	14 10.97	0.95	16.83	10 13 55.09	5.85	
	33		D.	28.0	6.3	58.0	50.0	43.0						
	34	η Aquarii	-	47.9	11.5	33.4	55.3	19.0	28 33.42	0.04	16.84	22 28 16.62	7.03	
	35	ζ Pegasi	-	5.9	30.2	52.4	14.7	38.8	34 52.40	0.03	16.85	22 34 35.58	6.84	
	36	τ^2 Aquarii	-	47.5	12.0	34.6	57.3	21.5	42 34.58	0.04	16.85	22 42 17.77	7.35	
	37	α Piscis Australis	-	26.0	53.7	19.0	44.5	11.8	50 19.00	0.06	16.85	22 50 2.21	7.79	
	38	α Pegasi	-	23.9	48.5	11.1	33.8	58.1	57 11.08	0.03	16.86	22 56 54.25	6.97	
	39	γ Cephei	-	53.2	26.1	2.7	39.1	- -	33 15.27	47.19	16.88	23 33 45.58	7.77	
	40	π Andromedæ	-	55.0	23.6	49.4	15.6	43.8	29 49.48	0.04	16.92	0 29 32.60	7.99	
	41	Moon's 1st Limb	-	1.4	26.0	48.4	11.0	35.7	43 48.50	0.04	16.92	0 43 31.62	- -	
	†42	B. A. C., 269	-	11.8	36.1	58.9	21.3	45.5	50 58.72	0.04	16.93	0 50 41.83	7.84	
	43	ε Piscium	-	19.5	43.4	5.2	27.6	51.3	56 5.40	0.04	16.93	0 55 48.51	7.80	
	44	35 Ceti	-	59.1	22.9	44.8	6.7	30.3	5 44.76	+ 0.04	16.94	1 5 27.86	7.75	
	45	Polaris	-	30.0	6.0	42.5	19.5	53.0	9 42.20	— 1.66	16.94	1 9 23.60	— 80.73	
	46	B. A. C., 4498, S. P.	C.	45.0	32.5	22.0	10.0	0.0	20 21.90	+ 0.49	16.95	13 20 4.44	+ 19.01	
	47	π Piscium	-	19.3	43.5	6.0	28.2	52.1	30 5.82	0.04	16.95	1 29 48 91	— 8.06	
	48	ν Piscium	-	48.0	12.0	33.8	55.6	19.5	34 33.78	+ 0.04	—16.95	1 34 16.87	— 7.93	

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m.	n.	c.
h.	s.	s.	s.	s.	s
Nov. 13, 0.4	— 16.91	— 0.035	- -	— 0.030	— 0.011

7. Several stars in the field.
9. Unsteady.
21. Through clouds.
24. Correction for semi-diameter, +0.69 s.
32. Before taking this observation, the chronograph was found to be out of order. This and the following observations of the night were made by eye and ear, over wires A 3, B 4, C 3, D 2, and E 3, unless otherwise expressed.
42. Cloudy.

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
Nov. 13	1	β Arietis	-	31.5	56.9	20.0	43.4	8.5	47 20.06	+ 0.03	—16.93	1 47 3.16	— 8.44	N.
	2	α Arietis	-	53.3	19.1	42.9	6.7	32.1	59 42.82	0.03	16.97	1 59 25.88	8.61	
	3	ξ² Ceti	-	22.1	46.2	8.4	30.3	54.2	21 8.24	0.04	16.98	2 20 51.30	8.19	
	4	γ Ceti	-	42.3	6.0	28.1	50.0	13.5	36 27.98	+ 0.04	16.99	2 36 11.03	8.05	
	5		B.	56.37	57.22	58.34	59.22	2.27						
15	†6	ζ Cygni	C.	22.47	23.40	24.37	25.53	26.46	7 24.49	— 0.05	20.54	21 7 3.90	- -	
	7		D.	46.57	49.82	50.87	51.77	52.67						
	8	β Ceti	D.	22.21	24.97	26.17	26.97	27.94	37 37.42	— 35.46	20.83	0 37 41.13	- -	
	9		E.	46.23	47.17	49.94	50.84	51.76						
	10		B.	40.83	41.82	42.90	43.95	46.81						
	11	Lacaille, 224	C.	6.12	6.89	8.09	8.98	9.90	43 7.89	+ 0.04	20.83	0 42 47.10	7.52	
	12		D.	28.81	31.83	32.81	33.80	34.77						
	13	Polaris	B.	17.00	53.50	29.00	7.00	59.00	2 17.90	+7 27.30	20.82	1 9 24.38	- -	
	14		C.	37.00	18.50	51.00	26.00	0.00						
	15		B.	- -	- -	13.11	13.88	16.82						
	16	Weisse, 197	C.	33.83	34.84	35.80	36.68	37.53	13 36.24	— 0.40	20.84	1 13 15.00	7.79	
	17		D.	55.07	57.85	58.77	59.62	0.55						
	18		B.	5.08	5.93	6.85	7.66	10.57						
	19	θ¹ Ceti	C.	28.12	28.97	30.11	31.09	31.91	17 29.99	+ 0.04	20.84	1 17 9.18	- -	
	20		D.	49.37	51.96	53.09	54.15	54.93						
	21		B.	16.87	17.83	18.86	19.73	22.71						
	†22	α Bootis	C.	40.97	41.96	42.88	43.82	44.84	9 42.96	- -	- -	- - - -	- -	
	23		D.	3.11	6.26	7.27	8.15	9.16						
	24		A.	22.08	22.99	23.84	26.75	27.77						
	25		B.	46.41	47.19	48.16	49.11	52.10						
16	26	Sun's 1st Limb	C.	10.40	11.32	12.31	13.30	14.21	27 12.27	0.03	21.64	15 26 50.66	- -	
	27		D.	32.61	35.61	36.53	37.47	38.41						
	28		E.	56.75	57.71	0.41	1.32	2.13						
	29	Sun's 2d Limb	B.	3.75	4.62	5.50	6.57	9.57	29 17.90	+ 11.89	21.64	15 29 8.15	- -	
	30		C.	27.87	28.90	29.87	30.70	31.63						
	31	Polaris	D.	44.00	32.00	12.00	46.00	21.00	24 55.00	- -	- -	- - - -	- -	Y.
	32	θ¹ Ceti	B.	6.33	7.28	8.25	9.07	11.81	17 31.23	— 0.03	21.99	1 17 9.24	7.63	
	33		D.	50.62	53.41	54.37	55.21	55.99						
	34		B.	14.19	14.95	15.86	16.73	19.49						
	35	ν Piscium	C.	36.91	37.87	38.67	39.65	40.47	34 38.74	0.04	21.97	1 34 16.73	7.92	
	36		D.	57.91	0.81	1.65	2.61	3.37						
	37		B.	23.82	24.71	25.64	26.55	29.27						
	38	ξ Piscium	C.	46.57	47.54	48.41	49.27	50.06	46 48.41	0.03	21.96	1 46 26.41	7.92	
	39		D.	7.63	10.37	11.33	12.08	12.89						
	40		B.	41.41	42.31	43.21	43.98	46.87						
	41	Weisse, 969	C.	4.66	5.56	6.41	7.26	8.11	55 6.44	0.05	21.96	1 54 44.42	8.19	
	42		D.	26.10	28.86	29.71	30.62	31.51						
	43		B.	51.95	52.85	53.70	54.61	57.36						
	44	* (9) +3° 4′	C.	14.57	15.57	16.51	17.47	18.40	0 16.54	0.03	21.95	1 59 54.55	7.97	
	45		D.	35.82	38.39	39.34	40.33	41.27						
	46	Groombridge, 466	D.	16.14	20.57	22.19	23.71	24.99	5 39.83	55.34	21.95	2 4 22.54	10.57	
	47		E.	53.49	54.90	59.27	0.81	2.22						
	48		C.	59.93	1.04	1.93	2.86	3.77						
	49	Weisse, 144	D.	21.51	24.47	25.33	26.21	27.07	11 24.92	— 23.03	—21.95	2 10 39.94	— 8.31	
	50		E.	45.15	45.91	48.62	49.53	50.42						

6. With the chronograph; uncertain.
22. Good observation; the azimuth cor. from Polaris.

Nov. 16. 3*h*. 45*m*. Image east 0.15*r*. Clamp west.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m*.	*n*.	*c*.
h.	s	s.	s.	s.	s.
Nov. 15, 21.1	— 20.54	— 0.067	- -	— 0.012	— 0.011
16, 2.3	— 21.94	+ 0.044	— 0.015	— 0.142	— 0.011

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
	1		B.	8.33	9.23	10.07	10.90	13.73						
Nov. 16	† 2	γ Ceti	C.	30.96	31.91	32.85	33.76	34.61	36 32.89	— 0.03	—21.93	2 36 10.93	— 8.06	Y.
	3		D.	52.17	54.87	55.80	56.66	57.52						
	4		A.	33.77	34.70	35.61	38.64	39.73						
	5		B.	58.89	59.78	0.76	1.66	4.72						
	† 6	Moon's 1st Limb	C.	23.83	24.87	25.77	26.77	27.76	9 25.74	0.05	21.90	3 9 3.78	- -	
	7		D.	46.80	49.79	50.85	51.72	52.61						
	8		E.	11.72	12.75	15.76	16.63	17.53						
	† 9	9 Tauri	B.	48.76	49.69	50.65	51.62	54.72	29 15.87	0.53	21.89	3 28 53.45	9.11	
	†10		D.	- -	39.21	40.22	41.21	41.98						
	11		B.	38.36	39.33	40.31	41.21	44.22						
	12	17 Tauri	C.	3.23	4.27	5.23	6.17	7.12	37 5.20	0.09	21.88	3 36 43.23	9.20	
	13		D.	26.17	29.20	30.11	31.13	31.94						
	14		B.	6.37	7.32	8.31	9.21	12.21						
	15	B. A. C., 1164	C.	31.24	32.17	33.21	34.09	34.97	39 33.19	0.09	21.88	3 39 11.22	9.20	
	16		D.	54.16	57.16	58.22	59.22	59.97						
	17		B.	14.37	15.37	16.30	17.27	20.32						
	18	η Tauri	C.	39.31	40.30	41.23	42.18	43.12	39 41.22	0.09	21.88	3 39 19.25	9.20	
	19		D.	2.12	5.21	6.22	7.08	7.98						
	20		B.	54.74	55.83	56.87	57.86	0.88						
	†21	27 Tauri	C.	19.86	20.77	21.72	22.65	23.57	41 21.71	0.09	21.88	3 40 59.74	9.21	
	22		D.	42.74	45.57	46.58	47.57	48.50						
	23		D.	0.60	3.91	5.10	6.07	7.12						
18	24	α Lyræ	E.	29.51	30.67	34.07	35.23	36.28	33 18.86	43.08	20.83	18 32 14.96	3.15	N.
	25		B.	49.93	50.86	51.98	53.10	56.26						
	26	β Lyræ	C.	16.97	18.23	19.15	20.21	21.24	45 19.19	— 0.05	20.84	18 44 58.30	3.68	
	27		D.	42.06	45.28	46.56	47.49	48.53						
	28		B.	28.11	29.31	30.25	31.24	34.29						
	†29	Venus, 1st Limb	C.	53.61	54.60	55.61	56.59	57.53	52 55.59	+ 0.02	20.85	18 52 35.49	- -	
	30		D.	17.00	19.98	21.05	21.83	22.81						
	31		C.	22.66	23.57	24.43	25.44	26.30						
	32	ζ Aquilæ	D.	44.25	46.92	47.94	48.82	49.75	59 47.51	— 23.09	20.85	18 59 3.57	5.09	
	33		E.	7.54	8.59	11.22	12.19	13.08						
	34		C.	1.70	3.04	4.12	5.37	6.57						
	35	α Cygni	D.	31.34	35.16	36.64	37.81	38.82	37 35.84	31.64	20.90	20 36 43.30	3.83	
	36		E.	3.42	4.66	8.43	9.70	10.85						
	37		B.	33.87	34.77	35.98	36.97	40.08						
	38	32 Vulpeculæ	C.	59.72	0.67	1.53	2.69	3.63	48 1.65	0.05	20.93	20 47 40.67	5.15	
	39		D.	23.26	26.41	27.43	28.33	29.40						
	40		B.	14.65	16.27	17.86	19.21	23.69						
	†41	B. A. C., 7332	C.	52.26	53.94	55.24	56.81	58.21	59 55.33	— 0.07	20.94	20 59 34.32	3.43	
	42		D.	27.07	31.37	33.00	34.51	35.87						
	43		B.	23.71	24.73	25.58	26.45	29.22						
	44	Weisse, 419	C.	47.08	48.15	48.96	49.85	50.78	21 48.94	+ 0.02	20.97	23 21 27.99	7.18	
	45		D.	8.57	11.43	12.31	13.21	14.07						
	46		C.	40.77	41.71	42.59	43.57	44.43						
	47	Weisse, 458	D.	1.95	4.57	5.74	6.61	7.40	24 5.18	— 22.49	20.98	23 23 21.71	7.19	
	48		E.	24.77	25.78	28.43	29.26	30.08						
	49		C.	11.53	12.47	13.29	14.17	15.00						
	50	ι Piscium	D.	32.44	35.18	36.29	37.12	37.85	33 35.75	22.47	20.98	23 32 52.30	— 7.30	
	51		E.	55.44	56.17	58.90	59.77	0.68						
	52		C.	43.46	44.37	45.22	46.16	46.98						
	53	Neptune	D.	4.14	7.21	8.13	9.00	9.71	59 7.62	— 22.39	—21.00	23 58 24.23	- -	
	54		E.	27.21	27.97	30.67	31.61	32.50						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m.	n.	c.
h.	s.	s.	s.	s.	s.
Nov. 18, 0.0	— 21.00	— 0.031	- -	— 0.062	+ 0.023

2. Through clouds.
6. Through clouds; steady.
9–10. Through clouds.
21. Through clouds.
29. Correction for semi-diameter, +0.73 s.
41. After this observation the eye-piece received a blow, which destroyed the verticality of the diaphragm, and probably changed the collimation.
The collimation for the rest of the evening was derived from a reversal of the instrument after the diaphragm had been adjusted, and is therefore not reliable.
The azimuth from Polaris and Polaris, S. P.

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
Nov. 18	1	α Andromedæ	C.	35.93	36.91	37.85	38.76	39.76	1 37.84	— 0.01	—21.00	1 1 16.83	— 7.52	N.
	2		B.	49.15	50.18	51.07	51.96	55.07						
	3	Weisse, 229	C.	12.62	13.60	14.41	15.34	16.17	14 14.43	+ 0.01	21.01	0 13 53.43	7.54	
	4		D.	34.11	36.82	37.76	38.71	39.56						
	5	Weisse, 233	B.	1.06	1.91	2.73	3.61	- -	14 14.21	11.88	21.01	0 14 5.08	7.54	
	6		C.	24.42	25.25	26.07	26.91	27.81						
	7		B.	57.49	58.41	59.35	0.23	2.88						
	8	12 Ceti	C.	20.37	21.36	22.10	23.00	23.83	23 22.17	+ 0.03	21.01	0 23 1.19	7.53	
	9		D.	41.45	44.21	45.08	45.97	46.83						
	10		B.	- -	42.63	43.65	44.64	47.81						
	11	Lacaille, 121	C.	7.20	8.18	9.14	10.22	11.12	26 9.33	— 0.14	21.01	0 25 48.18	7.51	
	12		D.	30.53	33.67	34.57	35.47	36.41						
	13		B.	10.51	11.45	12.44	13.57	16.43						
	14	B. A. C., 160	C.	35.69	36.74	37.70	38.70	39.61	30 37.71	+ 0.05	21.01	0 30 16.75	7.62	
	15		D.	59.07	1.91	3.06	3.87	4.91						
	16		B.	31.15	32.13	33.17	34.20	37.15						
	17	Lacaille, 167	C.	56.21	57.21	58.08	59.13	0.00	33 58.17	0.05	21.02	0 33 37.20	7.50	
	18		D.	19.27	22.25	23.18	24.21	25.24						
	19		B.	49.53	50.61	51.54	52.56	55.36						
	20	Lacaille, 238	C.	14.74	15.71	16.60	17.66	18.63	46 16.66	+ 0.05	21.02	0 45 55.69	7.49	
	21		D.	37.83	40.86	41.86	42.76	43.63						
	22		B.	11.50	47.50	26.00	3.00	51.00						
	†23	Polaris	C.	32.00	9.50	43.00	21.00	54.50	9 44.73	— 1.60	21.03	1 9 22.10	78.76	
	24		D.	38.00	28.00	6.50	43.00	16.50						
	25		C.	27.33	28.31	29.21	30.10	30.95						
	26	θ¹ Ceti	D.	48.66	51.43	52.31	53.26	54.16	17 52.89	22.65	21.04	1 17 9.20	7.62	
	27		E.	11.70	12.65	15.17	16.11	17.00						
	28	Weisse, 569	C.	21.43	22.41	23.31	24.14	25.10	33 34.77	— 11.42	21.05	1 33 2.30	8.06	
	29		D.	42.75	45.69	46.80	47.67	48.41						
	30	Weisse, 607	C.	31.57	32.53	33.37	34.27	35.97	34 33.54	+ 0.02	21.05	1 34 12.54	7.91	
	31		B.	0.33	1.23	2.19	3.10	5.96						
	32	Weisse, 628	C.	23.40	24.26	25.09	26.06	26.83	35 25.08	0.02	21.05	1 35 4.05	7.91	
	33		D.	44.22	47.07	47.97	48.84	49.62						
	34		B.	8.43	9.43	10.33	11.31	14.52						
	35	Lacaille, 527	C.	34.08	35.08	36.06	36.96	37.84	42 36.01	0.06	21.06	1 42 15.01	7.37	
	36		D.	57.58	0.57	1.70	2.57	3.56						
	37		B.	57.90	58.82	59.81	0.86	3.71						
	38	β Arietis	C.	22.21	23.31	24.18	25.10	26.10	47 24.13	0.00	21.06	1 47 3.08	8.41	
	39		D.	44.71	47.31	48.42	49.35	50.24						
	40		B.	55.16	55.96	57.09	58.15	1.46						
	41	Lalande, 3702	C.	21.09	21.91	22.81	23.87	24.81	53 22.82	0.06	21.06	1 53 1.82	7.34	
	42		D.	43.68	47.54	48.65	49.56	50.57						
	43		B.	20.16	21.20	22.29	23.22	26.14						
	44	α Arietis	C.	45.00	46.06	46.85	47.86	48.86	59 46.94	0.00	21.06	1 59 25.88	8.62	
	45		D.	7.77	10.71	11.73	12.62	13.61						
	46		B.	14.41	15.24	16.25	17.21	20.57						
	47	✱ (9) —28° 52′	C.	40.72	41.64	42.76	43.64	44.61	4 42.57	0.06	21.06	2 4 21.57	7.27	
	48		D.	4.33	7.77	8.87	9.82	10.76						
	49		B.	24.58	25.57	26.61	27.70	30.69						
	50	Lacaille, 649	C.	50.67	51.66	52.54	53.63	54.57	4 52.64	+ 0.06	—21.06	2 4 31.64	— 7.27	
	51		D.	14.33	17.78	18.87	19.74	20.70						

23. Very steady.

Nov. 18. 2*h*. 5*m*. Image east *r*. 0.24. Clamp west.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m*.	*n*.	*c*.
h.	s.	s.	s.	s.	s.
Nov. 18, 0.00	— 21.00	— 0.031	- -	— 0.062	+ 0.023

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
	1		B.	9.26	10.21	11.21	12.18	15.27						
Nov. 18	2	B. A. C., 743	C.	34.82	35.86	36.85	37.83	38.81	17 36.89	+ 0.06	—21.07	2 17 15.88	— 7.26	N.
	3		D.	58.53	1.63	2.67	3.57	4.64						
	4	Lacaille, 908	C.	26.84	27.82	28.67	29.67	30.59	47 28.72	+ 0.05	21.08	2 47 7.68	— 7.32	
	5		B.	57.83	54.90	51.11	47.71	37.64						
	6	β Ursæ Minoris, S. P.	C.	31.90	28.26	25.17	21.17	18.27	51 7.40	— 42.39	21.09	14 50 3.92	+ 5.24	
	7		B.	6.17	7.16	8.08	8.89	11.55						
	8	o¹ Eridani	C.	28.97	30.13	30.95	31.85	32.70	5 30.93	+ 0.03	21.13	4 5 9.83	— 7.76	
	9		D.	50.33	52.95	53.75	54.76	55.67						
	10		B.	43.41	44.60	45.55	46.61	49.41						
	11	B. A. C., 1355	C.	8.87	9.84	10.90	11.84	12.74	16 10.89	0.05	21.13	4 15 49.81	6.95	
	12		D.	32.10	35.54	36.41	37.23	38.30						
	13		B	31.10	31.86	32.81	33.75	36.58						
	14	ε Tauri	C.	54.90	56.10	56.91	57.81	58.71	20 56.90	0.00	21.13	4 20 35.77	9.07	
	15		D.	17.08	20.16	21.08	21.88	22.81						
	16		B.	39.08	39.88	40.80	41.72	44.90						
	17	Lacaille, 1483	C.	3.33	4.28	5.46	6.42	7.55	25 5.41	+ 0.05	21.14	4 24 44.32	7.03	
	18		D.	26.54	29.45	30.45	31.22	32.07						
	19		B	58.01	58.82	59.75	0.73	3.45						
	20	α Tauri	C.	21.70	22.60	23.33	24.26	25.07	28 23.45	0.00	21.14	4 28 2.31	8.92	
	21		D.	43.44	46.17	47.20	48.15	49.04						
	22		B.	11.36	12.12	13.07	14.00	17.22						
	23	Lacaille, 1540	C.	36.53	37.40	38.36	39.30	40.15	33 38.46	0.05	21.14	4 33 17.37	6.89	
	24		D.	59.86	2.96	3.90	4.88	5.78						
	25		B.	53.27	54.32	55.24	56.15	59.43						
	26	Lacaille, 1613	C.	18.72	19.67	20.61	21.57	22.56	45 20.85	+ 0.06	21.15	4 44 59.76	6.78	
	27		D.	42.60	45.21	46.77	47.81	48.84						
	28		B.	54.70	55.62	56.67	57.90	1.36						
	29	ι Aurigæ	C.	21.92	22.83	24.10	25.13	26.11	48 24.02	— 0.01	21.15	4 48 2.86	10.06	
	30		D.	46.96	50.17	51.21	52.25	53.33						
	31		B.	54.58	55.42	56.37	57.21	0.32						
	32	Uranus, Centre	C.	19.07	20.04	20.92	21.85	22.75	55 20.99	0.00	21.15	4 54 59.84	- -	
	33		D.	41.80	44.70	45.70	46.60	47.55						
	34		B.	37.88	38.82	39.88	40.88	44.07						
	35	Moon's 2d Limb	C.	3.32	4.35	5.43	6.38	7.53	58 5.50	0.00	21.15	4 57 44.35	- -	
	36		D.	27.15	30.23	31.23	32.27	33.11						
	37		B.	33.83	34.78	35.71	36.70	39.60						
	38	ε Leporis	C.	58.41	59.35	0.32	1.20	2.11	59 0.28	+ 0.05	21.15	4 59 39.19	6.97	
	39		D.	21.11	23.85	24.86	25.71	26.76						
	40		B.	18.33	19.63	21.10	22.33	26.20						
	41	α Aurigæ	C.	51.07	52.52	53.66	54.83	56.15	6 53.69	— 0.03	21.16	5 6 32.50	11.52	
	42		D.	21.32	25.25	26.52	27.60	28.88						
	†43	β Orionis	C.	15.58	16.71	17.58	18.46	19.12	8 28.80	— 11.31	21.16	5 7 56.33	7.61	
	†44		D.	36.75	39.58	40.60	41.48	42.18						
	45	Polaris, S. P.	C.	55.00	16.00	41.00	5.50	31.00	9 41.70	+ 1.60	21.30	1 9 22.00	78.55	
	46	α Virginis	C.	14.67	15.57	16.41	17.37	18.15	18 27.85	— 11.37	21.31	13 17 55.17	5.87	
	47		D.	35.97	38.76	39.66	40.51	41.44						
	48		B.	16.63	17.52	18.45	19.47	22.44						
	49	α Bootis	C.	40.73	41.76	42.66	43.55	44.49	9 42.67	0.00	21.35	14 9 21.32	— 4.80	
	50		D.	3.09	5.96	6.87	7.81	8.58						
	51		B.	8.08	8.87	9.71	10.68	13.49						
	†52	Mercury, 2d Limb	C.	31.26	32.29	33.26	34.19	35.08	44 33.24	+ 0.04	—21.37	14 44 11.63	- -	
	53		D.	53.16	55.77	56.63	57.60	58.50						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m.	n.	c.
h.	s.	s.	s.	s.	s.
Nov. 18, 0.0	— 21.00	— 0.031	- -	— 0.062	+ 0.023

43–44. Very much diffused.

52. Correction for semi-diameter, —0.28 s.

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
	1		B.	51.77	55.08	58.81	2.09	12.61						
Nov. 18	2	β Ursæ Minoris	C.	18.46	22.05	25.31	28.53	31.97	51 25.23	— 0.13	—21.38	14 51 3.73	— 5.25	N.
	3		D.	37.69	48.47	52.01	55.28	58.31						
	4		B.	13.55	14.45	15.37	16.26	19.33						
19	5	Sun's 1st Limb	C.	37.68	38.51	39.43	40.39	41.36	39 39.56	+ 0.04	21.41	15 39 18.19	- -	
	6		D.	0.00	2.97	3.82	4.71	5.65						
	7		B.	31.61	32.65	33.64	34.53	37.30						
	8	Sun's 2d Limb	C.	55.86	56.82	57.82	58.72	59.58	41 57.82	+ 0.04	21.41	15 41 36.45	- -	
	9		D.	18.17	21.28	22.16	23.08	24.11						
	10		D.	39.12	42.07	43.23	44.10	44.97						
	11	α Scorpii	E.	4.40	5.36	8.28	9.18	10.04	21 55.07	— 37.37	21.44	16 20 56.26	6.56	
	12		B.	4.94	6.10	7.31	8.31	11.81						
	13	α Lyræ	C.	34.10	35.32	36.18	37.23	38.61	32 36.37	0.02	21.53	18 32 14.82	3.12	
	14		D.	0.94	4.43	5.64	6.81	7.76						
	15	β Lyræ	C.	17.63	18.92	19.77	20.92	21.94	45 19.84	— 0.02	21.53	18 44 58.29	3.67	
	16		B.	29.16	30.11	30.90	31.85	35.10						
	†17	Venus, 1st Limb	C.	54.28	55.33	56.20	57.22	58.29	57 56.40	+ 0.06	21.54	18 57 35.65	- -	
	18		D.	18.13	20.58	21.77	23.12	23.97						
	19		C.	23.23	24.16	25.08	25.98	26.81						
	20	ζ Aquilæ	D.	44.76	47.51	48.62	49.43	50.21	59 36.58	— 11.50	21.54	18 59 3.54	5.08	
	21		B.	5.62	6.45	7.33	8.14	11.23						
	22	γ Pegasi	C.	28.87	29.97	30.79	31.67	32.44	6 30.84	0.22	21.35	0 6 9.27	7.48	Y.
	23		D.	50.56	53.55	54.42	55.30	56.27						
	24		B.	10.10	10.91	11.77	12.69	15.45						
	25	Weisse, 236	C.	32.90	33.88	34.82	35.64	36.47	15 34.72	0.18	21.35	0 15 13.18	7.49	
	26		D.	53.92	56.65	57.65	58.47	59.43						
	27		B.	58.11	58.88	59.80	0.79	3.61						
	28	12 Ceti	C.	20.91	21.77	22.67	23.52	24.37	23 22.67	0.18	21.36	0 23 1.13	7.53	
	29		D.	41.89	44.61	45.53	46.38	47.24						
	30		C.	41.04	41.95	42.86	43.82	44.62						
	31	✡ (9) —1° 33′	D.	1.88	4.62	5.52	6.34	7.17	46 53.98	11.41	21.37	0 46 21.21	7.63	
	32	✡ (9.10) —1° 33′	E.	35.11	35.92	38.75	39.57	40.47	49 37.96	45.00	21.37	0 48 31.59	7.64	
	33	Weisse, 820	C.	4.51	5.41	6.36	7.34	8.16	49 6.36	0.19	21.37	0 48 44.79	7.64	
	34		B.	16.86	17.75	18.85	19.70	22.47						
	35	B. A. C., 286	C.	39.93	40.83	41.78	42.65	43.63	55 41.78	0.21	21.37	0 55 20.19	7.79	
	36		D	1.23	3.87	4.78	5.74	6.57						
	37	Polaris	C.	34.00	11.00	46.00	22.00	58.00	9 46.20	- -	- -	- - - -	- -	
	38		B.	5.91	6.74	7.71	8.69	11.37						
	39	θ^1 Ceti	C.	28.87	29.91	30.71	31.57	32.51	17 30.72	0.18	21.38	1 17 9.16	7.62	
	40		D.	50.09	52.81	53.71	54.66	55.55						
	41		B.	4.08	4.91	5.78	6.77	9.50						
	†42	η Piscium	C.	27.57	28.60	29.52	30.37	31.23	24 29.41	0.22	21.39	1 24 7.81	— 8.09	
	43		D.	49.21	52.07	52.99	53.82	54.81						
	44		B.	16.00	41.50	0.00	27.00	39.50						
20	45	Polaris, S. P.,	C.	57.00	21.00	45.00	8.00	34.00	44.00	- -	- -	- - - -	- -	N.
	46		D.	51.00	58.00	21.50	48.50	12.00						
	47		B.	38.97	39.91	40.70	41.69	44.55						
21	48	Sun's 1st Limb	C.	3.32	4.08	5.06	5.88	6.75	48 5.02	0.10	24.09	15 47 40.83	- -	
	49		D.	25.34	28.44	29.28	30.25	31.11						
	50		B.	57.47	58.34	59.26	0.19	3.26						
	51	Sun's 2d Limb	C	21.80	22.72	23.55	24.57	25.45	50 23.63	— 0.10	—24.10	15 49 59.43	- -	
	52		D.	44.19	46.97	48.05	48.80	49.83						

17. Correction for semi-diameter, +0.73 s. Very tremulous over sets C and D.
42. Unsteady.

Nov. 19. 1h. 30m. { Image east 0.65 r. Clamp west. / Image east 0.21 r. Clamp east. } Result of a blow from N's head. Readings unreliable, as the wires were not perfectly vertical.

Adjusted and read— { Image west 0.17 r. Clamp east. / Image east 0.03. Clamp west.

Azimuth, for Y's observations, from Polaris and θ^1 Ceti.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate	m.	n.	c.
h.	s.	s.	s.	s.	s.
Nov. 19, 16.5	— 21.44	— 0.040	- -	- -	- -
19, 0.8	21.37	0.028	— 0.217	— 0.100	+ 0.023
21, 1.1	—✡24.83	—✡0.080	- -	+✡0.043	— 0.073

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s	m. s.	s.	h. m. s.	s.	
Nov. 21	1	α Lyræ	E.	33.00	33.94	37.56	38.59	39.61	33 36.54	— 57.39	—24.35	18 32 14.85	- -	N.
	2		A.	2.73	3.87	4.77	7.67	8.82						
	†3	Venus, 1st Limb	B.	28.20	29.06	30.19	31.19	34.23	7 30.56	+ 24.81	24.35	19 7 31.76	- -	
	4		C.	53.73	54.62	55.48	56.55	57.37						
	5		B.	45.00	45.81	46.84	47.82	50.87						
	6	16 Pegasi	C.	9.99	11.09	12.07	12.91	13.97	47 12.02	— 0.05	24.57	21 46 47.40	- -	
	7		D.	33.13	36.21	37.19	38.17	39.22						
	8		B.	42.63	43.38	44.15	44.97	47.74						
	9	α Aquarii	C.	5.10	6.11	7.00	7.86	8.73	59 6.97	0.07	24.58	21 58 42.32	- -	
	10		D.	26.13	28.90	29.71	30.68	31.51						
	11	Weisse, 528	C.	56.37	57.38	58.44	59.41	0.22	27 58.36	0.06	24.70	23 27 33.60	— 7.13	
	12		B.	14.72	15.73	16.67	17.51	20.30						
	13	ω Piscium	C.	37.80	38.74	39.57	40.54	41.31	52 39.58	0.11	24.65	23 52 14.81	7.58	Y.
	14		D.	58.87	1.71	2.56	3.39	4.25						
	15	Weisse, 1242	D.	30.56	33.50	34.43	35.30	36.20	1 45.37	34.47	24.66	0 0 46.23	7.44	
	16		E.	53.84	54.75	57.51	58.37	59.22						
	17		B.	51.34	52.27	53.16	54.09	56.97						
	18	* (9) —12° 7′	C.	14.62	15.59	16.49	17.41	18.21	5 16.50	0.13	24.67	0 4 51.71	7.44	
	19		D.	36.12	38.91	39.87	40.87	41.62						
	20	Weisse, 239	C.	44.80	45.67	46.49	47.41	48.20	14 46.51	0.13	24.68	0 14 21.70	7.47	
	21		B.	34.26	35.24	36.18	37.07	39.77						
	22	* (7) +3° 9′	C	57.17	58.12	58.98	59.84	0.69	19 58.96	0.11	24.68	0 19 34.16	7.53	
	23		D.	18.08	20.86	21.83	22.73	23.54						
	24		B.	1.31	2.24	3.12	4.07	6.76						
	25	12 Ceti	C.	24.19	25.12	25.92	26.87	27.70	23 26.00	0.12	24.69	0 23 1.19	7.52	
	26		D.	45.22	48.00	48.95	49.81	50.70						
	27		B.	58.63	59.51	0.39	1.33	3.94						
	28	Weisse, 444	C.	21.57	22.47	23.44	24.37	25.23	27 23.44	0.13	24.69	0 26 58.62	7.51	
	29		D.	42.00	45.41	46.27	48.11	48.92						
	30	Weisse, 706	B.	6.17	7.08	8.08	9.00	11.40	41 30.81	0.11	24.71	0 41 5.98	7.64	
	31		D.	49.91	52.72	53.66	54.62	55.45						
	32	Weisse, 711	E.	23.09	23.91	26.85	27.68	28.50	42 26.01	44.98	24.71	0 41 16.31	7.64	
	33	Lamont, 3059	D.	39.16	41.88	42.87	43.78	44.69	4 42.48	22.55	24.74	1 3 55.19	7.69	
	34		B.	48.39	49.23	50.11	50.98	53.79						
	35	38 Ceti	C.	11.13	12.07	12.94	13.79	14.61	8 12.93	0.12	24.74	1 7 48.07	7.71	
	36		D.	32.08	34.91	35.73	36.63	37.52						
	37		B.	15.55	16.31	17.30	18.17	20.88						
	38	Weisse, 197	C.	38.31	39.26	40.11	40.93	41.76	13 40.09	0.12	24.75	1 13 15.23	7.78	
	39		D.	59.31	2.05	2.93	3.79	4.71						
	40		B.	43.81	44.71	45.66	46.57	49.36						
	41	Weisse, 299	C.	6.87	7.87	8.75	9.72	10.55	19 8.78	0.11	24.75	1 18 43.91	7.95	
	42		D.	28.21	30.98	31.95	32.91	33.72						
	43	Polaris	B.	12.00	49.00	26.00	4.00	50.00	9 45.60	1.22	24.74	1 9 19.64	77.88	
	44		D.	40.00	27.00	8.00	43.00	17.00						
	45		B.	52.36	53.29	54.21	55.17	57.81						
	46	Weisse, 539	C.	15.51	16.60	17.43	18.31	19.34	32 17.47	0.11	24.77	1 31 52.59	8.07	
	47		D.	37.10	39.83	40.81	41.76	42.64						
	48		B.	50.79	51.76	52.71	53.58	56.27						
	49	Lalande, 3237	C.	13.65	14.59	15.43	16.31	17.11	39 15.47	0.12	24.78	1 38 50.58	7.79	
	50		D.	34.66	37.50	38.41	39.22	40.12						
	51		B.	42.04	43.00	43.91	44.81	47.57						
	52	Lalande, 3344	C.	5.55	6.51	7.39	8.26	9.09	43 7.36	— 0.11	—24.78	1 42 42.47	— 8.19	
	53		D.	27.08	29.94	30.90	31.76	32.61						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
Nov. 21, 1.1	—*24.83	—*0.080	- -	+*0.043	— 0.073
21, 4.5	— 24.98	— 0.070	— 0.046	+ 0.043	— 0.073

3. Correction for semi-diameter, +0.74 s.

* These constants, &c., have been used in the reduction of N's observations from ⊙ on 21st, to ⊙ on 22d. The azimuth from Polaris and Polaris, S. P., of the 21st; δ Ursæ Minoris and 51 Cephei, of the 23d; ζ Ursæ Minoris, of the 25th; and Polaris, of the 26th, has been used from the 21st to the 26th in the reduction of N's observations made between those dates.

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
Nov. 21	1	*b* Egeria, +13° 36′	D.	40.92	43.81	44.77	45.68	46.57	43 56.74	— 0.93	—24.78	1 43 31.03	— 8.19	Y.
	2		E.	- -	- -	8.26	9.16	9.97						
	3		B.	29.41	30.34	31.23	32.24	34.74						
	4	Weisse, 860	C.	52.25	53.07	53.91	54.88	55.51	48 54.00	0.12	24.79	1 48 29.09	7.97	
	5		D.	13.13	15.85	16.81	17.72	18.73						
	6		B.	33.88	34.63	35.52	36.43	39.11						
	7	Weisse, 984	C.	56.61	57.56	58.44	59.36	0.23	55 58.37	0.12	24.80	1 55 33.46	7.98	
	8		D.	17.47	20.26	21.17	22.04	22.88						
	9		B.	4.74	5.63	6.56	7.41	10.24						
	10	Weisse, 1042	C.	28.08	28.96	29.88	30.83	31.71	59 29.92	0.11	24.80	1 59 5.01	8.27	
	11		D.	49.62	52.46	53.42	54.23	55.10						
	12		B.	7.22	8.87	10.23	11.61	16.20						
	13	Groombridge, 466	C.	44.68	46.26	47.74	49.23	50.52	4 47.66	0.11	24.81	2 4 22.74	10.59	
	14		D.	19.12	23.46	25.22	26.56	27.96						
	15		B.	38.43	40.52	42.52	44.56	50.50						
	16	Arg. Z. N., 59, 20	C.	27.15	29.08	31.18	32.93	35.07	14 31.09	0.12	24.82	2 14 0.16	12.26	
	17		D.	11.70	17.65	19.80	21.80	23.54						
	18		B.	51.46	52.41	53.36	54.13	56.90						
	19	ξ^2 Ceti	C.	14.42	15.40	16.28	17.17	17.96	21 16.26	0.11	24.83	2 20 51.32	8.22	
	20		D.	35.45	38.37	39.31	40.18	41.07						
	21		B.	11.40	12.30	13.21	14.06	16.77						
	22	γ Ceti	C.	34.22	- -	35.81	36.78	37.62	36 36.03	0.19	24.84	2 36 11.00	8.08	
	23		D.	55.18	57.91	58.82	59.73	0.58						
	24		C.	51.78	52.74	53.77	54.61	55.35						
	25	B. A. C., 1851	D.	13.00	15.86	16.91	17.71	18.61	43 16.38	22.77	25.06	5 42 28.54	8.55	
	26		E.	36.21	37.21	39.74	40.65	41.51						
	27	B. A. C., 1881	C.	25.23	27.70	29.98	32.27	34.37	48 29.91	0.33	25.07	5 48 4.51	16.73	
	28		B.	50.87	51.89	52.98	53.98	57.31						
	29	B. Z., 518, 90	C.	18.47	19.64	20.76	21.83	22.78	55 20.64	0.09	25.08	5 54 55.47	10.25	
	30		D.	43.84	47.26	48.26	49.32	50.35						
	31		B.	- -	35.46	36.58	37.70	41.12						
	32	Lalande, 11528	C.	2.72	3.89	4.87	6.03	7.08	59 5.12	0.32	25.08	5 58 39.73	10.41	
	33		D.	28.62	32.06	33.30	34.35	35.37						
	34		B.	33.47	34.41	35.31	36.26	39.35						
	35	η Geminorum	C.	58.12	59.10	0.06	0.91	1.87	7 0.02	0.06	25.09	6 6 34.87	9.26	
	36		D	20.78	23.81	24.78	25.71	26.58						
	37		B.	37.26	38.22	39.15	40.10	43.11						
	38	μ Geminorum	C.	1.93	2.91	3.86	4.80	5.75	15 3.87	0.06	25.10	6 14 38.71	— 9.26	
	39		D.	24.61	27.76	28.61	29.61	30.41						
	40		B.	46.00	31.00	15.50	1.00	15.00						
	41	δ Ursæ Minoris, S. P.	C.	21.00	5.00	50.50	- -	- -	16 58.65	5.32	25.10	18 16 28.23	+ 61.94	
	42		D.	27.00	42.00	24.00	10.00	- -						
	43		B.	5.00	23.50	44.00	2.00	58.00						
	44	51 (Hev.) Cephei	C.	59.00	19.00	36.00	56.00	13.00	35 36.77	3.48	25.12	6 35 8.16	— 90.01	
	45		D.	15.00	12.00	32.00	50.00	7.00						
	46		B.	32.17	33.13	34.08	34.97	37.82						
	47	γ Canis Majoris	C	55.88	56.83	57.71	58.71	59.55	57 57.71	0.02	25.15	6 57 32.56	7.03	
	48		D.	17.52	20.41	21.36	22.30	23.23						
	49		B	1.00	2.08	3.12	4.07	7.00						
	50	B. A. C., 2363	C	26.16	27.22	28.16	29.09	30.10	6 28.18	0.06	25.16	7 6 2.96	9.13	
	51		D.	49.31	52.37	53.41	54.34	55.27						
	52		B.	53.24	54.16	55.11	56.08	58.93						
	53	δ Geminorum	C	17.73	18.81	19.77	20.78	21.59	12 19.76	— 0.06	—25.16	7 11 54.54	— 8.95	
	54		D.	40.52	43.45	44.46	45.41	46.34						

Azimuth cor., Nov. 21, latter part from δ Ursæ Minoris, S. P., and 51 (Hev.) Cephei. *r.*

Nov. 21. 2*h*. 45*m*. Image west 0. 05. Clamp west.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s	s.	s.	s.	s.
Nov. 21, 4.5	— 24.98	— 0.070	— 0.046	+ 0.043	— 0.073
5.8	- -	- -	+ 0.055	— 0.083	— 0.073

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
Nov. 21	1	63 Geminorum	B.	33.23	34.18	35.26	36.16	39.09	19 59.66	— 0.06	—25.17	7 19 34.42	— 8.86	Y.
	2		C.	57.63	58.70	59.59	0.58	1.40						
	3		D.	20.35	23.20	24.20	25.17	26.10						
	4	α^1 Geminorum	A.	18.07	18.97	20.00	23.25	24.54	26 14.01	+ 0.01	25.18	7 25 48.84	9.54	
	5		E.	3.76	4.74	7.97	8.96	9.86						
	6	α^2 Geminorum	B.	45.41	46.59	47.62	48.61	51.85	26 14.55	— 0.08	25.18	7 25 49.28	9.54	
	7		C.	12.49	13.51	14.53	15.58	16.56						
	8		D.	37.28	40.51	41.62	42.52	43.56						
	9	g Geminorum	B.	8.77	9.66	10.65	11.53	14.53	38 34.75	0.05	25.20	7 38 9.50	8.56	
	10		C.	32.75	33.77	34.76	35.73	36.63						
	11		D.	55.06	57.94	58.93	59.78	0.71						
	12	Moon's 2d Limb	A.	6.90	7.76	8.71	11.69	12.71	40 58.36	0.02	25.20	7 40 33.18	- -	
	13		B.	31.73	32.61	33.59	34.57	37.47						
	†14		C.	56.50	57.49	58.45	59.36	0.25						
	15		D.	19.16	22.22	23.11	24.09	25.98						
	16		E.	43.94	44.84	47.72	48.59	49.56						
	17	ϕ Geminorum	B.	2.13	3.08	4.21	5.09	8.23	45 29.76	0.07	25.20	7 45 4.49	9.03	
	18		C.	27.81	28.80	29.71	30.82	31.71						
	19		D.	51.37	54.51	55.34	56.36	57.31						
	20	6 Cancri	B	1.27	2.36	3.36	4.24	7.51	55 29.16	— 0.07	25.22	7 55 3.87	— 9.02	
	21		C.	27.13	28.21	29.08	30.15	31.08						
	22		D.	50.97	54.00	54.99	56.03	57.02						
	23	λ Ursæ Minoris, S. P.	C.	59.00	12.00	28.00	41.00	58.00	1 27.60	+ 8.79	25.22	20 1 11.17	+ 162.56	
	24	α Virginis	B.	56.09	56.97	57.97	58.87	1.67	18 21.13	- -	- -	- - - -	- -	
	25		C.	19.24	20.21	21.08	22.07	22.90						
	26		D.	40.58	43.43	44.43	45.30	46.16						
	27	α Bootis	B.	21.21	22.17	23.09	24.08	26.96	9 47.38	— 0.05	25.92	9 14 21.41	- -	N.
	†28		C.	45.47	46.51	47.32	48.37	49.22						
	29		D.	7.75	10.71	11.70	12.61	13.47						
	30	Sun's 1st Limb	B.	53.08	54.17	55.20	56.11	59.21	52 19.57	0.10	26.01	15 51 53.46	- -	
22	31		C.	17.58	18.74	19.57	20.52	21.39						
	32		D.	40.20	43.11	43.93	44.90	45.80						
	33	Sun's 2d Limb	B.	11.85	12.84	13.78	14.76	17.73	54 38.29	0.10	26.01	15 54 12.18	- -	
	34		C.	36.55	37.58	38.44	39.28	40.14						
	35		D.	59.00	1.67	2.73	3.61	4.40						
23	36	α Ophiuchi	D.	18.81	21.58	22.61	23.54	24.44	29 33.65	34.50	28.07	17 28 31.08	— 4.86	
	37		E.	42.28	43.18	45.77	46.72	47.56						
	38	α Lyræ	B.	11.61	12.78	13.83	15.10	18.46	32 43.43	0.39	28.16	18 32 14.88	3.09	
	39		C	40.67	42.01	43.11	44.26	45.39						
	40		D.	- -	11.16	12.39	13.41	14.39						
	41	β Lyræ	B.	57.09	58.17	59.26	0.41	3.57	45 26.48	0.04	28.19	18 44 58.25	3.64	
	42		C.	24.33	25.45	26.56	27.61	28.57						
	43		D.	59.53	52.56	53.68	54.75	55.72						
	44	Venus, 1st Limb	C.	47.99	49.09	49.96	50.87	51.82	18 14.79	24.92	28.24	19 17 22.38	- -	
	†45		D.	11.19	14.23	15.23	16.21	17.27						
	46		E.	36.32	37.27	40.43	41.46	42.46						
	†47	β Aquarii	C.	44.41	45.43	46.37	47.26	48.18	24 46.33	0.08	28.43	21 24 17.82	6.71	
	48	β Cephei	C.	14.16	16.86	19.47	22.14	24.41	27 52.27	32.85	28.43	21 26 50.99	0.85	
	49		D.	15.71	23.58	26.21	28.97	31.17						
	50	ϵ Pegasi	B.	28.31	29.41	30.35	31.17	33.77	37 53.32	— 0.06	—28.44	21 37 24.82	— 6.29	
	51		C.	51.71	52.53	53.34	54.24	54.96						
	52		D.	12.81	15.33	16.33	17.27	18.33						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m.	n.	c.
h.	s.	s.	s.	s.	s.
Nov. 23, 0.1	— 28.67	— 0.090	- -	+ 0.043	— 0.073

14. Steady.
28. Good observation.

45. Correction for semi-diameter, $+0.75^{s}$.
47. Not worth much.

Nov. 21. 8*h*. 10*m*. Image 0.00^{r}. Clamp west.

Nov. 23. 22*h*. 20*m*. Image west 0.025^{r}. Clamp west.
The azimuth from δ Ursæ Minoris and 51 Cephei.

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
	1		B.	16.10	14.39	11.36	9.16	2.51						
Nov. 23	†2	A. Z. N. 176.26, S. P.	C.	19.60	18.06	15.07	13.52	11.81	49 15.60	— 0.10	—28.46	9 48 47.04	— 10.89	N.
	3		D.	28.31	21.70	19.57	17.38	15.45						
	4		B.	18.36	19.07	19.87	20.64	23.67						
	5	Weisse, 1333	C	40.95	41.94	43.02	43.92	44.65	58 42.99	0.09	28.48	21 58 14.42	7.00	
	6		D.	2.33	5.26	6.18	7.10	7.93						
	7		B.	29.91	30.84	31.83	32.68	35.34						
	8	Weisse, 1384	C.	53.24	54.04	54.95	55.81	56.64	0 54.95	0.09	28.48	22 0 26.38	7.02	
	9		D.	14.54	17.31	18.18	19.11	19.86						
	10	Weisse, 13	E	23.87	24.82	27.74	28.47	29.24	3 26.83	45.50	28.49	22 2 12.84	6.99	
	11		B	37.31	38.17	39.14	40.04	42.73						
	12	θ Aquarii	C.	0.41	1.34	2.14	3.12	4.00	10 2.16	0.09	28.50	22 9 33.57	7.01	
	13		D.	21.51	24.17	25.24	26.17	26.97						
	14		B.	21.28	22.23	23.11	24.12	26.84						
	15	Weisse, 675	C.	44.63	45.43	46.26	47.08	48.23	32 46.24	— 0.09	28.52	22 32 17.63	7.08	
	16		D.	5.43	8.47	9.32	10.17	11.08						
	17	B. A. C., 8039	B.	45.99	48.10	50.64	52.95	59.63	57 51.46	+ 56.42	28.58	22 58 19.30	5.50	
	18		B.	15.41	16.32	17.24	18.06	20.73						
	19	γ Ceti	C.	38.23	39.40	40.18	40.92	41.81	36 40.06	— 0.07	28.90	2 36 11.09	— 8.07	
	20		D.	59.22	1.96	2.94	3.74	4.71						
	21	δ Ursæ Minoris, S. P.	B.	52.50	37.00	21.50	6.00	20.50	20 17.87	3 20.03	29.23	18 16 28.61	+ 62.49	
	22		C.	28.00	12.50	- -	- -	- -						
	23		B.	49.96	50.78	51.80	52.66	55.79						
	24	γ Geminorum	C.	13.71	14.63	15.53	16.50	17.22	30 15.55	0.05	29.25	6 29 46.25	— 8.84	
	25		D.	35.47	38.39	39.35	40.36	41.10						
	26		B.	9.25	10.25	11.21	12.06	14.96						
	27	α Canis Majoris	C.	33.13	34.06	34.91	35.76	36.84	39 34.93	0.10	29.26	6 39 5.57	6.99	
	28		D.	54.86	57.74	58.70	59.68	0.58						
	29	51 Cephei	D.	17.00	13.50	34.00	53.00	11.50	43 25.80	7 46.85	29.27	6 35 9.68	90.93	
	30		B.	15.25	16.28	17.28	18.16	21.33						
	31	ε Canis Majoris	C.	41.23	42.20	43.21	44.41	45.38	53 43.27	0.12	29.28	6 53 13.87	6.39	
	32		D.	5.28	8.32	9.25	10.21	11.28						
	33		B.	55.00	56.10	57.00	57.95	0.85						
	34	δ Cancri	C	19.27	20.15	21.11	22.10	23.10	37 21.09	0.05	29.43	8 36 51.61	8.16	
	35		D.	41.16	44.21	45.26	46.13	47.00						
	36		B.	33.93	34.86	35.88	36.65	39.27						
	37	ε Hydræ	C.	56.93	57.82	58.68	59.56	0.36	39 58.68	0.06	29.44	8 39 29.18	7.61	
	38		D.	17.96	20.61	21.66	22.62	23.45						
	39	α Cancri	E.	9.96	10.76	13.56	14.36	15.13	52 12.75	45.92	29.45	8 50 57.38	7.80	
	40		C.	43.67	44.51	45.39	46.33	47.36						
	†41	Moon's 2d Limb	D.	5.45	8.41	9.29	10.17	11.00	25 8.85	23.40	29.50	9 24 15.95	- -	
	42		E.	29.39	30.28	32.93	33.81	34.74						
	43		B.	16.00	16.95	17.86	18.73	21.51						
25	44	67 Ceti	C.	38.92	39.97	40.87	41.73	42.54	10 40.79	0.08	32.84	2 10 7.87	7.76	
	45		D.	0.12	2.80	3.77	4.65	5.51						
	46		B.	59.44	0.21	1.18	2.12	5.00						
	47	ξ^2 Ceti	C.	22.45	23.26	24.18	25.15	25.97	21 24.21	0.06	32.84	2 20 51.31	8.31	
	48		D.	43.60	46.31	47.21	48.03	49.00						
	49		B.	33.39	35.36	37.81	40.45	47.00						
	50	B. A. C., 814	C.	32.16	34.49	36.61	39.00	41.51	33 36.87	— 0.11	—32.84	2 33 3.92	— 14.19	
	51		D.	26.72	33.71	36.19	38.27	40.43						

2. Faint and uncertain.
41. Through clouds.

Nov. 23. 23*h.* 10*m.* Image east 0.002 *r.* Clamp west.
23. 8*h.* 20*m.* Image west 0.01.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
Nov. 25, 7.7	—32.94	— 0.018	- -	+ 0.043	— 0.073

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s	m. s.	m. s.	s.	h. m. s.	s.	
	1		B.	57.13	58.11	59.10	0.35	4.00						
Nov. 25	2	16 Persei	C.	25.83	26.82	27.97	29.14	30.23	42 28.04	— 0.04	—32.85	2 41 55.15	— 9.85	N.
	3		D.	52.58	55.92	56.87	57.81	58.77						
	4		B.	53.51	54.52	55.34	56.26	59.19						
	5	δ Arietis	C.	17.62	18.60	19.44	20.53	21.37	4 19.53	0.05	32.86	3 3 46.62	8.90	
	6		D.	39.78	42.87	43.82	44.63	45.52						
	7		B.	26.78	28.65	29.91	31.18	35.31						
	† 8	α Persei	C.	1.91	3.42	4.57	5.98	7.41	15 39.38	— 34.46	32.87	3 14 32.05	— 11.35	
	9		D.	34.46	38.46	40.00	41.46	42.51						
	10	ζ Ursæ Minoris, S. P.	C.	38.13	33.94	29.64	25.39	20.87	49 29.59	+ 0.15	32.88	15 48 56.86	+ 11.47	
	11		B.	9.89	10.65	11.55	12.51	15.46						
	12	α Leonis	C.	33.31	34.16	34.97	35.78	36.60	1 34.99	— 0.06	32.98	10 1 1.96	— 7.27	
	13		D.	54.54	57.51	58.44	59.31	0.25						
	14	B. A. C., 3495	C.	16.50	27.50	37.00	47.00	56.00	9 36.80	0.39	32.98	10 9 2.83	23.73	
	15		B.	3.82	4.70	5.98	6.82	10.16						
	16	30 Leonis Minoris	C.	31.12	31.88	33.17	34.47	35.41	18 33.33	0.04	32.98	10 18 0.31	7.80	
	17		D.	56.83	59.95	0.86	1.83	3.00						
	18		B.	41.29	42.26	43.26	44.10	46.77						
	19	ρ Leonis	C.	4.47	5.41	6.27	7.27	8.12	26 6.27	0.06	32.99	10 25 33.22	7.03	
	20		D.	25.62	28.50	29.37	30.26	31.11						
	21		B.	38.81	39.73	40.63	41.45	44.26						
	22	34 Sextantis	C.	1.67	2.67	3.51	4.41	5.27	36 3.49	0.07	32.99	10 35 30.43	6.83	
	23		D.	22.66	25.43	26.50	27.27	28.08						
	24		B.	8.65	9.49	10.43	11.43	14.18						
	25	l Leonis	C.	31.80	32.85	33.72	34.62	35.47	42 33.69	0.06	32.99	10 42 0.64	6.92	
	26		D.	53.25	55.98	57.00	57.80	58.71						
	27		B.	2.53	3.40	4.31	5.23	7.91						
	†28	χ Leonis	C.	25.56	26.56	27.53	28.34	29.14	58 27.40	0.06	33.00	10 57 54.34	6.70	
	29		D.	46.70	49.52	50.47	51.52	52.23						
	30		B.	38.80	39.74	40.63	41.51	44.24						
	31	Moon's 2d Limb	C.	1.88	2.91	3.83	4.71	5.64	7 3.90	0.08	33.00	11 6 30.82	- -	
	32		D.	23.68	26.43	27.37	28.18	28.97						
	33	φ Leonis	E.	54.36	55.33	57.83	58.87	59.73	10 57.22	— 44.92	33.01	11 9 39.29	6.51	
	34		A.	39.13	39.85	40.74	43.38	44.27						
	35	υ Leonis	B.	1.83	2.75	3.63	4.52	7.16	30 11.44	+ 14.91	33.01	11 29 53.34	6.44	
	36		D.	45.60	48.32	49.30	50.11	50.96						
	†37	Jupiter, 1st Limb	D.	19.92	22.67	23.65	24.54	25.26	41 33.19	— 32.55	33.01	11 40 28.80	- -	
	†38		E.	42.72	43.61	- -	- -	- -						
	39		B.	23.49	24.37	25.31	26.11	28.81						
26	40	ω Piscium	C.	46.38	47.34	48.21	49.08	49.89	52 48.18	0.11	33.30	23 52 14.76	7.33	Y.
	41		D.	7.47	10.18	11.13	12.00	12.87						
	42	Weisse, 1196	D.	23.65	26.33	27.23	28.13	28.98	59 26.86	22.96	33.31	23 58 30.59	7.38	
	43	Weisse XXIII, 1269	D.	45.47	48.29	49.15	50.00	50.89	2 48.76	23.04	33.31	0 1 52.41	7.38	
	44	Weisse, 0h. 4	C.	36.68	37.63	38.47	39.50	40.41	2 38.54	0.11	33.31	0 2 5.12	7.38	
	45	Weisse, 172	B.	54.18	55.19	56.11	57.00	0.71	11 19.66	0.12	33.31	0 10 46.23	7.41	
	46		D.	39.36	42.17	43.14	43.93	44.83						
	47	✡ (9) —6° 59′	C.	18.49	19.40	20.27	21.11	21.85	11 20.22	0.13	33.31	0 10 46.78	7.41	
	48		B.	9.80	10.77	11.63	12.55	15.40						
	49	12 Ceti	C.	32.73	33.72	34.60	35.42	36.25	23 34.55	0.12	33.32	0 23 1 11	7.47	
	50		D.	53.69	56.67	57.53	58.39	59.17						
	51	B. A. C., 240	C.	58.00	28.00	56.00	27.00	54.00	47 56.60	— 1.11	—33.33	0 47 22 16	— 51.02	

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m.	n.	c.
h. Nov. 26, 1.3	s. — 33.34	s. — 0.022	s. — 0.046	s. + 0.043	s. — 0.073

8. Tremulous; set D only good. The other sets have been rejected in the reduction.
28. Set D unreliable; very tremulous.

37–38. Correction for semi-diameter, $+1.17^{s}$.
Nov. 25. 3h. 0m. Image coincident with wire.
25. 10h. 30m. Image west 0.02^{r}.

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
				s.	s.	s.	s.	s.	m. s.	m. s	s.	h m. s.	s.	
1861. Nov. 26	1	Weisse, 0-1076	C.	42.88	43.81	44.71	45.60	46.49	1 44.70	— 0.11	—33.33	1 1 11.25	— 7.82	Y.
	2	Weisse, 0-1079	E.	34.91	35.77	38.49	39.38	40.22	2 37.75	45.62	33.33	1 1 18.81	7.82	
	3		A.	51.00	27.00	3.00	52.00	36.00						
	4		B.	21.00	56.00	34.00	10.00	57.00						
	5	Polaris	C.	39.00	16.00	52.00	29.00	2.00	9 51.08	0.01	33.33	1 9 17.74	75.01	
	6		D.	46.00	37.00	15.00	50.00	25.00						
	7		E.	9.00	45.00	32.00	8.00	45.00						
	8		B.	17.58	18.66	19.54	20.48	23.17						
	9	θ^1 Ceti	C.	40.85	41.77	42.71	43.52	44.41	17 42.62	0.13	33.34	1 17 9.15	7.59	
	10		D.	1.94	4.78	5.76	6.61	7.47						
	11	✡ (9. 10) —2° 20′	C.	40.71	41.67	42.52	43.38	44.24	33 42.50	0.12	33.34	1 33 9.04	7.35	
	12		B.	22.87	23.69	24.66	25.57	28.23						
	13	Weisse, 821	C.	45.73	46.62	47.51	48.42	49.32	46 47.51	0.12	33.35	1 46 14.05	7.80	
	14		D.	6.68	9.43	10.44	11.36	12.19						
	15		B.	9.14	10.07	11.03	11.93	14.56						
	16	58 Ceti	C.	32.07	33.05	33.92	34.77	35.56	51 33.83	0.12	33.35	1 51 0.36	7.82	
	17		D.	52.93	55.77	56.72	57.52	58.39						
	18		A.	12.97	14.08	14.96	17.62	18.67						
	19	Weisse, 1047	C.	0.08	0.98	1.88	2.81	3.69	0 1.89	0.03	33.35	1 59 28.50	8.30	
	20		E.	44.98	46.12	48.74	49.64	50.57						
	21	Weisse, 1050	B.	37.08	37.96	38.87	39.81	42.81	0 2.41	0.11	33.35	1 59 28.94	8.30	
	22		D.	21.90	24.96	25.93	26.88	27.86						
	23		B.	43.13	44.07	45.00	45.91	48.81						
	24	Weisse, —64	C.	6.56	7.52	8.41	9.30	10.14	6 8.47	0.11	33.35	2 5 35.01	8.33	
	25		D.	28.37	31.12	32.07	32.91	33.74						
	26		C.	39.56	40.51	41.38	42.25	43.08						
	27	67 Ceti	D.	0.66	3.37	4.41	5.24	6.00	11 3.91	22.70	33.36	2 10 7.85	7.77	
	28		E.	23.65	24.45	27.13	27.96	28.94						
	29		B.	47.52	48.45	49.36	50.31	52.96						
	30	Weisse, 235	C.	10.51	11.49	12.40	13.30	14.15	16 12.38	0.11	33.36	2 15 32.90	8.20	
	31		D.	31.67	34.52	35.46	36.33	37.22						
	32		B.	5.60	6.60	7.52	8.42	10.93						
	33	Weisse, 333	C.	28.62	29.51	30.40	31.28	32.13	21 30.31	0.11	33.36	2 20 56.84	8.14	
	34		D.	49.48	52.14	53.16	54.05	54.86						
	35		C.	42.57	43.51	44.42	45.39	46.17						
	36	γ Ceti	D.	3.54	6.46	7.38	8.24	9.05	37 6.87	— 22.54	33.36	2 36 10.96	8.09	
	37		E.	26.42	27.36	29.98	30.82	31.74						
	38	10 Euterpe, +14° 47′	B.	27.31	28.39	29.26	30.31	33.06	48 41.26	+ 11.48	33.37	2 48 19.37	8.61	
	39		C.	50.97	51.91	52.91	53.82	54.67						
	40	✡ (9) +14° 49′	C.	8.64	9.55	10.47	11.39	12.40	49 22.07	— 11.71	33.37	2 48 36.99	8.61	
	41		D.	30.05	33.20	34.08	35.06	35.87						
	42		B.	30.33	31.33	32.24	33.14	35.87						
	43	Weisse, 970	C.	53.32	54.23	55.16	56.12	56.90	55 55.17	0.12	33.37	2 55 21.67	7.83	
	44		D.	14.43	17.31	18.17	19.06	19.92						
	45		C.	42.35	43.37	44.20	45.23	46.21						
30	46	Sun's 1st Limb	D.	5.02	8.07	8.99	9.94	10.84	27 8.51	— 24.11	42.76	16 26 1.64	- -	N.
	47		E.	29.58	30.57	33.46	34.45	35.33						
	48		B.	38.09	39.07	40.00	41.10	43.91						
	49	Sun's 2d Limb	C.	2.69	3.56	4.60	5.56	6.51	29 4.64	+ 0.08	42.76	16 28 21.96	- -	
	50		D.	25.31	28.45	29.38	30.24	31.12						
	51		B.	20.71	21.57	22.62	23.52	26.21						
	52	α Aquilæ	C.	43.71	44.67	45.63	46.51	47.30	44 45.55	+ 0.06	—42.98	19 44 2.63	— 5.57	
	53		D.	4.92	7.62	8.59	9.47	10.28						

Nov. 26. 3*h*. 0*m*. Image 0.00 *r*. Clamp west.
Azimuth, November 30, from Polaris and κ Piscium.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m*.	*n*.	*c*.
h. Nov. 30, 21.8	s. — 43.13	s. — 0.074	s. + 0.137	s. — 0.044	s. — 0.073

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
	1		B.	12.86	14.03	14.97	15.88	18.79						
Nov. 30	†2	Venus, 1st Limb	C.	37.81	38.91	39.80	40.88	41.81	51 39.91	+ 0.07	—42.99	19 50 57.79	- -	N.
	3		D.	0.92	3.97	5.08	5.97	6.94						
	4		B.	0.57	1.42	2.39	3.43	5.88						
	5	α Aquarii	C.	23.42	24.31	25.14	25.98	26.90	59 25.16	0.06	43.14	21 58 42.08	— 6.63	
	6		D.	44.35	47.09	47.98	48.86	49.73						
	7		B	51.79	52.68	53.57	54.44	57.23						
	8	θ Aquarii	C.	14.82	15.81	16.63	17.47	18.38	10 16.63	0.07	43.16	22 10 33.54	6.90	
	9		D.	35.89	38.79	39.76	40.65	41.48						
	10		B.	14.98	15.81	16.77	17.58	20.47						
	11	ρ Aquarii	C.	37.78	38.88	39.77	40.63	41.55	13 39.79	0.07	43.16	22 13 56.69	6.90	
	12		D.	59.26	1.98	2.89	3.81	4.66						
	13		B.	10.93	11.94	12.81	13.62	16.31						
	14	κ Piscium	C.	33.58	34.53	35.51	36.47	37.27	20 35.52	+ 0.06	43.18	23 20 52.40	7.09	Y.
	15		D.	54.68	57.47	58.43	59.21	0.10						
	16	9 Piscium	D.	13.97	16.61	17.47	18.33	19.20	21 28.27	— 33.54	43.19	23 20 11.51	7.09	
	17		E.	36.53	37.59	40.20	40.99	41.85						
	18		B	51.09	51.95	52.78	53.67	56.72						
	†19	Weisse, 528	C.	14.85	15.78	16.70	17.56	18.48	28 16.61	+ 0.05	43.19	23 27 33.47	7.02	
	20		D.	36.27	39.49	40.44	41.29	42.10						
	21		B.	39.72	43.43	47.38	51.59	2.82						
	22	γ Cephei	C.	20.21	23.79	27.71	31.89	35.41	34 27.79	— 0.37	43.20	23 33 44.21	— 6.53	
	23		D.	52.41	4.48	8.21	12.20	15.58						
	24	B. A. C., 4165, S. P.	C.	45.00	13.00	38.00	6.00	32.00	14 38.80	+ 4.59	43.25	12 14 0.14	+ 18.89	
	25	Groombridge, 67	C.	32.00	44.00	55.00	6.00	17.00	23 54.80	— 1.40	43.28	0 23 10.12	— 17.67	
	26	B. A. C., 240	C.	6.00	36.00	5.00	35.00	4.00	48 5.20	3.83	43.29	0 47 18.07	— 49.38	
	27		A.	3.00	40.00	16.00	5.00	46.00						
	28		B.	32.00	8.00	46.00	24.00	12.00						
	29	Polaris	C.	50.00	28.00	3.00	40.00	13.00	10 2.24	- -	- -	- - - -	- -	
	30		D.	58.00	44.00	25.00	59.00	34.00						
	31		E.	18.00	55.00	44.00	19.00	54.00						
	32		B.	16.45	17.48	18.63	19.49	22.45						
Dec. 2	†33	ε Bootis	C.	41.92	43.07	44.00	45.06	46.07	39 44.09	0.09	47.07	- - - -	- -	N
	34		D.	5.85	8.51	9.90	10.75	11.67						
	35	β Ursæ Minoris	C.	44.87	48.40	51.55	54.99	58.64	51 51.69	— 0.60	47.07	14 51 4.02	+ 4.90	
	36		B.	4.43	5.47	6.50	7.51	10.66						
3	37	δ Sculptoris	C.	30.37	31.48	32.42	33.34	34.35	42 32.47	+ 0.05	47.33	23 41 45.20	— 7.41	G.
	38		D.	54.39	57.61	58.56	59.46	0.58						
	39		B.	37.31	38.18	39.08	39.98	42.77						
	40	ω Piscium	C.	0.16	1.12	1.91	2.86	3.72	53 2.00	— 0.02	47.33	23 52 14.65	7.26	
	41		D.	21.27	24.13	25.00	25.88	26.71						
	42		B.	43.83	44.77	45.73	46.57	49.27						
	†43	c^1 Piscium	C.	6.86	7.87	8.68	9.63	10.42	56 8.69	— 0.02	47.34	23 55 21.33	7.26	
	44		D.	27.99	30.80	31.77	32.61	33.51						
	45		B	8.31	9.27	10.17	11.08	13.87						
	46	Weisse, XXIII, 1242	C.	31.54	32.46	33.40	34.36	35.21	1 33.47	+ 0.02	47.34	0 0 46.15	7.32	
	47		D.	53.08	55.97	56.87	57.77	58.65						
	48		B.	31.11	32.00	32.90	33.88	36.70						
	49	γ Pegasi	C.	54.61	55.54	56.47	57.43	58.25	6 56.48	— 0.04	47.34	0 6 9.10	— 7.36	
	50		D.	16.23	19.17	20.10	20.97	21.82						
	51	B. A. C., 4165, S. P.	C.	51.00	18.00	45.00	9.00	38.00	14 44.20	+ 7.54	47.35	12 14 4.39	+ 16.91	
	52	Groombridge, 67	C.	35.00	48.00	58.00	11.00	21.50	23 58.70	— 2.15	—47.35	0 22 9.20	— 17.08	

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
Dec. 2, 14.8	— 47.07	- -	- -	— 0.08	— 0.073

2. Correction for semi-diameter, +0.80 s.
19. Dim.
33. Very tremulous.
43. Preceded by a star of (9) mag. to n^d.

Nov. 30. 24*h.* 00*m.* Image west 0.11 r. Clamp west.
Azimuth, December 2, mean of November 30 and December 3 and 4.

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
Dec. 3	1	B. A. C., 240	C.	12.00	43.00	13.00	44.00	11.00	48 12.60	— 6.61	—47.37	0 47 18.62	— 47.93	Y.
	2		A.	8.00	44.00	19.00	9.00	52.00						
	3		B.	36.00	12.00	49.00	27.00	16.00						
	4	Polaris	C.	2.00	38.00	9.00	46.00	19.00	10 8.80	— 6.69	47.38	1 9 14.73	71.53	
	5		D.	4.00	53.00	33.00	8.00	43.00						
	6		E.	27.00	5.00	52.00	27.00	2.00						
	7		B.	14.81	15.73	16.53	17.43	20.17						
	8	Weisse, 206	C.	37.62	38.54	39.41	40.22	41.06	14 39.37	0.00	47.39	1 13 51.98	7.66	
	9		D.	58.47	1.37	2.17	3.00	3.96						
	10		B.	31.77	32.66	33.52	34.41	37.18						
	11	θ^1 Ceti	C.	54.61	55.53	56.47	57.33	58.27	17 56.53	+ 0.01	47.39	1 17 9.16	7.55	
	12		D.	15.96	18.65	19.67	20.57	21.37						
	13		C.	48.58	49.63	50.56	51.48	52.39						
	14	β Arietis	D.	11.06	13.91	14.91	15.67	16.75	48 14.40	— 23.92	47.41	1 47 3.08	8.39	
	15		E.	35.16	36.16	39.06	39.93	40.81						
	16		B.	23.11	23.97	24.97	25.82	28.47						
	17	58 Ceti	C.	46.03	46.97	47.81	48.65	49.43	51 47.76	0.00	47.41	1 51 0.36	7.81	
	18		D.	6.96	9.71	10.72	11.53	12.31						
	19		D.	37.71	40.41	41.42	42.23	42.99	55 52.09	33.68	47.41	1 54 31.00	7.96	
	20	Weisse, 963	E.	0.32	1.23	4.00	4.87	5.71						
	21		B.	41.30	42.31	43.23	44.11	46.91						
	22	B. A. C., 687	C.	4.27	5.17	6.07	6.99	7.79	7 6.08	0.01	47.42	2 6 18.65	8.02	
	23		D.	25.31	27.99	28.97	29.99	30.81						
	24		B.	57.93	58.89	59.81	0.81	3.71						
	25	Weisse, 143	C.	21.54	22.47	23.28	24.21	25.03	11 23.32	0.04	47.42	2 10 35.87	8.36	
	26		D.	42.98	45.87	46.83	47.79	48.73						
	27		B.	1.46	2.41	3.30	4.32	6.99						
	28	Weisse, 235	C.	24.71	25.57	26.44	27.35	28.15	16 26.40	0.02	47.43	2 15 38.96	8.20	
	29		D.	45.79	48.58	49.46	50.36	51.17						
	30		B	19.77	20.64	21.57	22.44	25.04						
	31	Weisse, 333	C.	42.56	43.47	44.41	45.24	46.13	21 44.39	0.02	47.43	2 20 56.95	8.14	
	32		D.	3.76	6.41	7.31	8.16	9.00						
	33		B.	33.79	34.72	35.64	36.53	39.19						
	34	γ Ceti	C.	56.57	57.57	58.37	59.32	0.14	36 58.41	0.01	47.44	2 36 10.97	— 8.10	
	35		D.	17.58	20.41	21.27	22.14	22.99						
	36		B.	43.10	44.27	45.18	46.19	49.11						
	†37	α Bootis	C.	7.52	8.56	9.25	10.20	11.13	10 9.39	0.05	47.70	14 9 21.64	- -	N.
	38		D.	29.87	32.57	33.66	34.77	35.43						
	39		C.	7.46	8.67	9.45	10.53	11.36						
4	†40	Sun's 1st Limb	D.	30.00	33.15	33.94	34.75	35.53	44 33.61	— 24.24	47.67	16 43 21.70	- -	
	41		E	54.61	55.53	58.73	59.68	0.74						
	42		B	.88	.12	.13	.12	.14						
	†43	Sun's 2d Limb	C.	.74	.86	.76	.77	.53	30.82	+ 0.05	47.67	43.20	- -	
	44		D.	.72	.62	.72	.63	.61						
	45		B.	31.09	32.37	33.68	34.63	38.07						
	46	α Lyræ	C.	0.40	1.65	2.73	3.83	4.98	33 2.72	— 0.12	47.65	18 32 14.95	- -	
	47		D.	27.23	30.87	32.07	33.08	34.19						
	48		B	42.78	43.69	44.73	45.76	48.63						
	†49	Moon's 1st Limb	C.	7.91	8.90	9.91	10.83	11.83	25 9.87	+ 0.04	47.64	19 24 22.27	- -	
	50		D.	30.97	34.06	35.13	35.99	36.97						
	51		B.	3.99	4.97	5.95	6.76	9.71						
	†52	δ Aquilæ	C.	27.21	28.13	28.97	29.91	30.81	40 29.04	— 0.01	—47.63	19 40 41.40	- -	
	53		D.	48.55	51.31	52.21	53.12	53.99						

37, 40. Very tremulous.
43. Very tremulous and uncertain; seconds of transit assumed.
49. Faint, but steady.
51–52–53. This observation is unaccountably discordant.

Dec. 3. 4h. 0m. { r. Image east 0.02. Clamp west. Image west 0.02. Clamp east.

Dec. 4. The azimuth from Polaris, of Dec. 3d, 4th, and 5th.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m.	n.	c.
h.	s.	s.	s.	s.	s.
Dec. 3, 1.1	— 47.38	— 0.038	+ 0.069	— 0.125	— 0.073
4, 23.8	— 47.57	+ 0.015	+ 0.070	— 0.128	— 0.073

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s	s.	s.	s.	m. s.	m. s.	s	h. m. s.	s.	
	1		C.	48.29	49.22	50.11	51.00	51.87						
Dec. 4	2	α Aquilæ	D.	9.42	12.27	13.21	14.02	14.88	45 12.74	— 22.69	—47.62	19 44 2.43	- -	N.
	3		E.	32.57	33.41	36.02	36.98	37.83						
	4		B.	47.32	48.27	49.15	50.11	53.03						
	†5	Venus's 1st Limb	C.	11.91	12.98	13.86	14.77	15.77	10 13.95	+ 0.04	47.62	20 9 27.19	- -	
	6		D.	34.88	37.76	38.91	39.76	40.80						
	†7	Anon. +6° 32′	B.	20.87	21.81	22.64	23.42	25.88	24 45.50	— 0.02	47.60	22 23 57.88	— 6.60	
	†8		D.	4.57	7.51	8.51	9.43	10.41						
	9		B.	32.14	32.91	33.69	34.54	37.43						
	10	Weisse, 518	C.	54.81	55.63	56.53	57.45	58.31	25 56.63	0.02	47.59	22 25 9.02	6.60	
	11		D.	15.94	18.76	19.61	20.46	21.26						
	12		B.	38.57	39.48	40.40	41.27	44.13						
	13	Weisse, 601	C.	1.71	2.61	3.50	4.41	5.32	30 3.45	— 0.02	47.59	22 29 15.84	6.61	
	14		D.	22.60	25.43	26.56	27.47	28.33						
	15	Weisse, 645	B.	28.76	29.71	30.63	31.58	34.11	31 42.27	+ 11.32	47.59	22 31 6.00	6.61	
	16		C.	51.72	52.73	53.63	54.52	55.34						
	17		B.	56.54	58.12	59.95	1.50	6.77						
	18	B. A. C., 7953	C.	39.34	41.10	42.21	44.28	46.00	42 42.64	— 0.23	47.59	22 41 54.82	5.13	
	19		D.	18.84	23.81	25.50	26.91	28.73						
	20	α Piscis Australis	C.	47.41	48.49	49.49	50.43	51.54	51 2.44	— 12.93	47.58	22 50 1.93	- -	
	21		D.	11.63	14.83	15.83	16.87	17.85						
	22		B.	54.12	55.16	56.01	56.87	0.07						
	23	89 Aquarii	C.	18.77	19.77	20.67	21.61	22.60	3 20.76	+ 0.04	47.58	23 2 33.22	— 7.31	
	24		D.	41.52	44.56	45.63	46.60	47.51						
	25		B.	36.18	37.07	38.23	39.37	42.50						
	26	α Andromedæ	C.	2.00	3.21	4.16	5.18	6.28	2 4.20	— 0.08	47.57	0 1 16.55	- -	
	27		D.	26.11	29.11	30.17	31.25	32.24						
	†28	B. A. C., 4339, S. P.	B.	32.94	6.23	56.18	48.19	40.56	45 0.82	+3 42.50	47.56	12 47 55.76	+ 5.11	
	29	B. A. C., 4342, S. P.	C.	7.33	57.28	48.65	40.08	31.69	48 49.01	+ 2.00	47.56	12 48 3.45	+ 5.09	
	30	e Piscium	C.	2.97	3.91	4.81	5.66	6.49	2 4.77	— 0.01	47.55	1 1 17.21	— 7.66	
	31		B.	50.56	51.50	52.37	53.26	56.00						
	32	35 Ceti	C.	13.25	14.19	15.28	16.12	16.92	6 15.18	0.00	47.55	1 5 27.63	7.68	
	33		D.	34.41	37.13	38.06	38.87	39.72						
	34		A.	5.50	44.00	22.00	9.00	52.00						
	35		B.	35.00	10.50	49.00	27.00	15.00						
	36	Polaris	C.	56.50	35.00	10.00	43.00	19.00	10 7.56	— 6.76	47.55	1 9 13.25	- -	
	37		D.	2.50	51.50	31.50	6.00	41.00						
	38		E.	27.00	2.00	50.50	25.00	58.50						
	39		B.	31.76	32.59	33.57	34.67	37.32						
	40	θ^1 Ceti	C.	54.83	55.72	56.63	57.51	58.38	17 56.65	+ 0.02	47.55	1 17 9.12	- -	
	41		D.	15.99	18.91	19.81	20.69	21.43						
	42		B.	24.51	25.41	26.47	27.26	30.31						
	43	Weisse, 569	C.	47.78	48.77	49.71	50.62	51.63	33 49.70	— 0.03	47.54	1 33 2.13	8.03	
	44		D.	9.13	12.08	12.97	13.97	14.84						
	45	Anon. +11° 24′	C.	35.47	36.45	37.31	38.19	38.97	34 37.28	0.03	47.24	1 33 50.01	8.03	
	46	A. Z., 145, 126	C.	45.67	47.22	48.47	49.81	51.08	3 48.45	0.18	47.53	2 3 0.74	10.17	
	47	A. Z., 153, 111	C.	32.93	34.33	35.61	36.93	38.21	4 35.60	0.18	47.53	2 3 47.89	10.20	
	48		B.	- -	42.53	43.47	44.23	47.03						
	49	B. A. C., 687	C.	4.43	5.36	6.23	7.07	7.89	7 6.39	0.19	47.53	2 6 18.67	8.03	
	50		D.	25.31	28.13	29.13	29.92	30.77						
	51		B.	57.87	58.86	59.83	0.85	3.67						
	52	Weisse, 143	C.	21.61	22.53	23.39	24.27	25.12	11 23.41	— 0.04	—47.53	2 10 35.85	— 8.37	
	53		D.	43.26	45.99	47.13	47.97	48.87						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
Dec. 4, 23.7	— 47.57	+ 0.015	+ 0.070	— 0.128	— 0.073

5. Correction for semi-diameter +0.82 s.
7–8. Faint.
28. Very steady.
Azimuth for Dec. 3d, 4th, 5th and 6th, for Y's observations, is from Polaris of those dates.

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s	s	
Dec. 4	1	Arg. Z. N., 59, 20 - -	C.	49.55	51.68	54.12	55.94	57.94	14 53.85	— 0.40	—47.53	2 14 5.92	— 12.21	N.
	2	B. A. C., 740 - - -	C.	43.17	49.91	54.81	1.47	6.16	18 55.10	1.20	47.53	2 18 6.37	24.27	
	3	Weisse, 333 - - -	C.	42.82	43.70	44.51	45.40	46.23	21 44.53	0.02	47.53	2 20 56.98	8.15	
	4		B.	33.73	34.56	35.56	36.41	39.24						
	5	Weisse, 585 - - -	C.	56.47	57.34	58.35	59.23	0.22	34 58.36	0.02	47.53	2 34 10.81	8.16	
	6		D.	17.54	20.46	21.30	22.07	22.91						
	7		B.	20.71	21.61	22.61	23.73	26.47						
	8	B. Z., 391, 44 - - -	C.	45.08	46.06	47.00	48.03	48.82	37 47.03	0.05	47.53	2 36 59.45	8.84	
	9		D.	7.62	10.53	11.53	12.40	13.30						
	10	Anon. (9.10)+14° 49′ -	C.	4.96	5.95	6.85	7.73	8.61	49 6.82	— 0.04	47.52	2 48 19.26	8.65	
	11		A.	35.46	36.42	37.41	40.07	41.08						
	12	10 Euterpe +14° 49′ - -	C.	22.71	23.76	24.62	25.41	26.17	49 16.78	+ 7.72	47.52	2 48 36.98	8.65	
	13		D.	44.35	47.28	48.15	49.03	49.83						
	14	Rumker, 755 - - -	C	23.06	23.93	24.97	25.87	26.70	51 24.91	— 0.04	47.52	2 50 37.35	— 8.69	
	15		B.	28.89	29.81	30.67	31.58	34.33						
	16	α Ceti - - - - - -	C.	51.78	52.68	53.56	54.43	55.27	55 53.53	0.00	47.52	2 55 6.01	- -	
	17		D.	12.80	15.51	16.32	17.24	18.07						
	18		B	33.23	34.18	34.96	35.97	38.96						
	†19	o^1 Eridani - - - - - -	C.	56.18	57.23	58.07	59.00	59.78	5 58.04	0.25	47.51	4 5 10.28	- -	
	20		D.	17.41	20.08	21.10	21.93	22.78						
	21		B	37.14	37.96	38.82	39.67	42.51						
	22	Juno - - - - - -	C.	59.77	0.77	1.63	2.58	3.40	14 1.65	0.26	47.51	4 13 13.88	- -	
	23		D.	20.83	23.63	24.51	25.35	26.21						
	24		B.	57.85	58.75	59.78	0.66	3.48						
	25	ε Tauri - - - - - -	C.	21.85	22.80	23.70	24.76	25.62	21 23.77	0.34	47.51	4 20 35.92	- -	
	26		D.	44.00	46.96	47.85	48.76	49.74						
	27		B	24.75	25.73	26.78	27.58	30.38						
	28	α Tauri - - - - - -	C.	48.34	49.41	50.33	51.35	52.20	28 50.36	0.32	47.51	4 28 2.53	- -	
	29		D	10.25	13.18	14.16	15.04	15.93						
	30	Polaris, S. P. - - -	E.	47.00	8.50	34.00	45.00	2.50	40 3.40	30 2.90	47.10	1 9 13.40	- -	
	31		B.	18.48	21.97	25.42	28.75	39.47						
	†32	β Ursæ Minoris - - -	C.	45.03	48.81	51.98	55.45	58.41	51 51.94	0.95	47.14	14 51 3.85	- -	
	33		D.	4.77	15.02	18.72	21.87	24.89						
	34	β Libræ - - - - - -	D.	41.69	44.36	45.26	46.10	46.98	10 56.14	34.25	47.15	15 9 34.74	- -	
	35		E.	4.63	5.48	8.08	8.93	9.93						
	36	α Coronæ Borealis - -	C.	35.39	36.37	37.27	38.30	39.21	29 37.31	0.35	47.15	15 28 49.81	- -	
	37		C.	4.27	5.49	6.29	7.09	8.08						
	38	Mercury - - - -	D.	26.29	29.19	30.31	31.31	32.04	31 29.78	23.70	47.15	15 30 18.93	- -	
	39		E.	50.41	51.27	53.87	54.87	55.94						
	40	α Serpentis - - - -	D.	34.79	37.17	38.24	39.11	40.00	38 49.07	34.14	47.16	15 37 27.77	- -	
	41		E.	57.51	58.31	0.97	1.89	2.73						
	42		B.	53.28	54.17	55.17	56.09	58.88						
5	43	α Ophiuchi - - - -	C.	16.67	17.71	18.59	19.51	20.26	29 18.56	0.31	47.24	17 28 31.01	- -	
	44		D.	38.11	41.10	42.09	42.99	43.83						
	45		B.	25.36	26.30	27.24	28.11	31.05						
	46	α Aquilæ - - - - - -	C.	48.30	49.39	50.26	51.15	52.02	44 50.26	0.29	47.28	19 44 2.69	- -	
	47		D.	9.58	12.39	13.39	14.22	15.11						
	48		B.	19.57	20.43	21.49	22.50	25.22						
	†49	Venus, 1st Limb - -	C.	44.19	45.21	46.06	47.08	47.87	14 46.16	— 0.20	—47.29	20 13 59.49	- -	
	50		D.	7.09	9.98	10.99	11.89	12.82						

19. Uncertain; set B worthless.
32. Very fine observation.
49. Correction for semi-diameter +0.82.

Dec. 4. 3*h*. Image 0.00. Clamp west (*r.*)

Dec. 4. 4*h*. Image east 0.30. Clamp west (*s.*)

4. 4*h*. 45*m*. Image east 0.32. Clamp west (*r.*)

3*h*. to 5*h*. The instrument was several times reversed, but the readings were extravagantly discordant, probably from the instrument not settling in its proper position on the Y's. The last two readings with Clamp west agreeing reasonably, it was assumed that the level, but not the horizontal azimuth, had changed between the observations of α Ceti and o^1 Eridani.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s	s.
Dec. 4, 4.0	- -	- -	— 0.200	— 0.170	— 0.073
16.7	— 47.19	— 0.030	— 0.200	— 0.170	— 0.073

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m s.	s.	h. m. s.	s.	
	1		B.	45.10	46.00	46.91	47.83	50.77						
Dec. 5	2	Moon's 1st Limb	C.	9.60	10.48	11.39	12.29	13.21	24 11.42	— 0.24	—47.29	20 23 23.89	- -	N.
	3		D.	32.10	35.04	35.99	36.89	37.73						
	4		B.	35.60	36.57	37.52	38.39	41.21						
	5	✡ (9) +6° 42′	C.	58.59	59.51	0.52	1.36	2.15	25 0.42	0.02	47.73	22 24 12.67	— 6.58	Y.
	6		D.	19.58	22.41	23.34	24.33	25.20						
	7		C.	42.98	44.00	44.88	45.78	46.55						
	8	Lalande, 44272	D.	4.24	6.88	7.81	8.77	9.58	33 7.47	22.63	47.73	22 31 57.12	6.62	
	9		E.	27.19	28.15	30.87	31.77	32.64						
	10		C.	51.58	52.54	53.40	54.43	55.19						
	11	Lalande, 44279	D.	12.71	15.58	16.46	17.27	18.10	33 16.03	22.63	47.73	22 32 5.67	6.62	
	12		E.	35.80	36.70	39.32	40.30	41.11						
	13		B.	41.99	42.92	43.98	44.91	47.89						
	14	μ Pegasi	C.	6.83	7.83	8.73	9.83	10.78	44 8.85	— 0.06	47.73	22 43 21.06	6.40	
	15		D.	29.79	32.78	33.89	34.90	35.75						
	16		B.	21.21	22.20	23.14	24.19	27.41						
	17	α Piscis Australis	C.	47.56	48.60	49.59	50.59	51.56	50 49.60	+ 0.06	47.73	22 50 1.93	7.46	
	18		D.	11.80	14.98	16.10	17.03	18.00						
	19		B.	41.43	42.43	43.43	44.30	46.94						
	20	Weisse, 1159	C.	4.82	5.77	6.64	7.59	8.45	56 6.63	— 0.03	47.73	22 55 18.87	6.73	
	21		D.	26.11	28.99	29.97	30.86	31.75						
	22		B.	35.81	36.77	37.88	39.08	42.83						
	23	✡ (7) —39° 55′	C.	5.13	6.71	7.81	8.87	10.02	8 7.72	+ 0.08	47.72	23 7 20.07	7.60	
	24		D.	32.77	36.42	37.47	38.57	39.63						
	25		C.	14.29	15.47	16.57	17.83	19.00						
	26	✡ (8) —40° 1′	D.	41.92	45.37	46.47	47.57	48.69	9 45.97	— 29.18	47.72	23 8 29.07	7.60	
	27		E.	11.47	12.67	16.40	17.37	18.46						
	28		B.	8.36	9.48	10.63	11.85	15.41						
	29	✡ (7) —39° 54′	C.	38.17	39.41	40.41	41.38	42.58	12 40.41	+ 0.08	47.72	23 11 52.77	7.58	
	30		D.	5.38	9.13	10.31	11.29	12.42						
	31		B.	15.38	16.27	17.19	17.97	20.78						
	32	κ Piscium	C.	38.17	39.17	39.93	40.82	41.73	20 39.98	0.00	47.72	23 19 52.25	7.06	
	33		D.	59.11	1.87	2.96	3.77	4.57						
	34	B. A. C., 8213	C.	10.00	27.00	40.50	56.00	9.50	28 40.70	— 3.25	47.72	23 27 49.73	1.24	
	35		A.	50.00	35.00	22.00	40.00	24.50						
	36		B.	51.00	37.00	22.00	8.00	26.00						
	37	B. A. C., 4070, S. P.	C.	53.00	38.50	25.00	12.00	58.50	58 25.82	+ 2.69	47.71	11 57 40.79	— 2.65	
	38		D.	25.50	42.00	26.00	13.50	0.00						
	39		E	27.00	13.00	32.00	19.00	5.00						
	40	B. A. C., 4165, S. P.	C.	54.00	20.00	48.00	13.00	- -	15 3.75	— 8.96	47.71	12 14 7.08	+ 15.29	
	41	Groombridge, 67	C.	35.00	47.00	58.50	10.00	21.00	23 58.30	2.15	47.71	0 23 8.44	— 16.59	
	42		B.	25.69	26.57	27.49	28.27	30.98						
	43	✡ (7.8) —1° 15′	C.	48.57	49.36	50.17	51.07	51.87	31 50.23	0.00	47.71	0 31 2.52	7.46	
	44		D.	9.44	12.21	13.07	13.94	14.76						
	45	B. A. C., 240	C.	9.00	41.50	9.50	41.00	9.00	48 10.00	6.47	47.70	0 47 15.69	46.70	
	46		A.	5.00	42.00	21.00	8.00	50.00						
	47		B.	34.00	10.50	48.00	24.00	15.00						
	48	Polaris	C	55.00	32.50	7.50	45.00	19.00	10 7.66	— 6.69	47.70	1 9 13.28	70.22	
	49		D.	3.00	54.00	33.00	8.00	43.00						
	50		E.	26.00	4.00	53.00	27.00	4.00						
	51		B	31.86	32.85	33.80	34.71	37.36						
	52	θ^1 Ceti	C.	54.87	55.87	56.81	57.69	58.57	17 56.82	+ 0.01	—47.70	1 17 9.13	— 7.55	
	53		D.	16.28	19.00	19.94	20.96	21.67						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h. Dec. 5, 0.7	s. — 47.70	s. + 0.013	s. + 0.069	s. — 0.125	s. — 0.073

Dec. 5. 2*h.* 30*m.* *r.* { Image 0.00. Clamp west. / Image 0.04 west. Clamp east.

DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s	m. s.	s.	h. m. s.	s.	
	1		C	48.82	49.77	50.77	51.77	52.72						
Dec. 5	2	β Arietis	D.	11.40	14.11	15,21	16.21	17.08	48 14.70	— 23.92	—17.69	1 47 3.09	— 8.39	Y.
	3		E	35.45	36.41	39.37	40.23	41.12						
	4		B.	30.81	31.62	32.58	33.39	36.21						
	5	67 Ceti	C.	53.63	54.69	55.51	56.41	57.29	10 55.53	+ 0.01	47.68	2 10 7.86	7.77	
	6		D	14.84	17.72	18.60	19.42	20.29						
	7		B.	16.36	17.48	18.57	19.55	22.64						
	8	Lacaille, 711	C.	42.37	43.34	44.40	45.43	46.32	16 44.40	— 0.05	47.68	2 15 56.67	7.20	
	9		D.	6.10	9.35	10.42	11.37	12.38						
	10		B.	14.20	15.13	16.11	16.87	19.57						
	11	ξ^2 Ceti	C.	37.30	38.24	39.01	39.87	40.62	21 39.02	0.02	47.68	2 20 51.32	8.23	
	12		D	58.27	1.23	2.08	2.97	3.89						
	13		B.	31.90	32.87	34.12	35.29	38.89						
6	14	α Lyræ	C.	1.31	2.29	3.38	4.57	5.50	33 3.39	0.16	48.53	18 32 14.70	2.99	N.
	15		D.	28.03	31.55	32.64	33.76	34.77						
	16		B.	26.53	27.33	28.16	29.15	31.74						
	17	α Aquilæ	C.	49.50	50.42	51.35	52.20	53.00	44 51.28	0.06	48.59	19 44 2.64	5.57	
	18		D.	10.68	13.36	14.33	15.37	16.16						
	19		B.	55.63	56.53	57.49	58.41	1.18						
	20	β Aquilæ	C.	18.45	19.49	20.31	21.15	22.08	49 20.39	0.06	48.59	19 48 31.74	5.63	
	21		D.	39.62	42.53	43.50	44.31	45.09						
	22		B	50.29	51.13	52.19	53.18	56.17						
	†23	Venus, 1st Limb	C.	15.00	15.79	16.74	17.78	18.66	19 16.83	0.00	48.61	20 19 29.05	- -	
	24		D.	37.64	40.51	41.56	42.54	43.34						
	25		B.	0.81	1.71	2.73	3.50	6.47						
	26	Moon's 1st Limb	C.	24.50	25.58	26.42	27.39	28.49	18 26.55	0.02	48.66	21 17 37.87	- -	
	27		D.	46.83	49.54	50.55	51.43	52.36						
	28		B.	41.67	42.70	43.53	44.37	47.18						
	29	β Aquarii	C	4.48	5.31	6.27	7.20	8.12	25 6.37	0.04	48.66	21 24 17.67	6.58	
	30		D.	25.72	28.41	29.35	30.16	31.05						
	31		B.	48.12	49.11	50.02	51.02	53.71						
	32	ξ Aquarii	C.	11.23	12.33	13.14	14.03	14.81	31 13.09	0.03	48.67	21 30 24.39	6.69	
	33		D.	32.40	35.29	36.21	37.04	37.88						
	34		C.	35.49	36.51	37.36	38.35	39.18						
	35	B. A. C., 7739	D.	58.97	2.21	3.24	4.17	5.14	5 50.06	12.65	48.69	22 4 48.72	7.24	
	36		B.	57.21	58.10	59.08	59.93	2.80						
	37	θ Aquarii	C.	20.18	21.16	22.12	22.97	23.85	10 22.10	— 0.03	48.70	22 9 33.37	6.85	
	38		D.	41.51	44.26	45.27	46.12	46.88						
	39	B. A. C., 7817	C.	19.85	20.70	21.62	22.60	23.65	19 21.68	+ 0.01	48.70	22 18 32.99	7.24	
	40		B.	39.91	40.81	41.64	42.51	45.24						
	41	Weisse, 601	C.	2.81	3.74	4.63	5.49	6.37	30 4.63	— 0.06	48.71	22 29 15.87	6.59	
	42		D.	23.94	26.78	27.69	28.57	29.40						
	43	Weisse, 645	C.	52.93	53.82	54.62	55.46	56.28	31 54.62	0.06	48.71	22 31 5.85	6.58	
	44	Weisse, 658	C.	20.58	21.53	22.40	23.32	24.16	32 22.40	— 0.06	48.71	22 31 33.63	6.58	
	45		B.	43.41	44.29	45.28	46.29	49.31						
	46	Lacaille, 9256	C	8.90	9.97	10.87	11.77	12.75	41 10.84	+ 0.01	48.71	22 40 22.14	7.33	
	47		D.	32.26	35.41	36.38	37.35	38.37						
	48		B.	48.48	49.52	50.64	51.83	55.17						
	49	Lacaille, 9298	C.	16.85	18.10	19.19	20.30	21.45	48 19.21	0.01	48.72	22 47 30.50	7.56	
	50		D.	43.28	46.69	47.80	48.91	49.95						
	51		B.	22.18	23.31	24.24	25.30	28.38						
	52	α Piscis Australis	C.	48.60	49.69	50.54	51.76	52.63	50 50.66	+ 0.02	—48.72	22 50 1.96	— 7.45	
	53		D.	12.90	15.97	17.14	18.14	19.06						

23. Correction for semi-diameter, +0.83 s.
December 6. Azimuth from Polaris.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m.	n.	c.
h.	s.	s.	s.	s.	s.
Dec. 6, 0.2	— 48.78	— 0.045	+ 0.030	— 0.115	— 0.073

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Date.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
	1		B.	53.82	51.60	49.73	47.86	42.08						
Dec. 6	2	α Ursæ Majoris, S P.	C.	4.25	2.37	0.75	58.51	56.59	56 0.47	+ 0.39	—48.72	10 55 12.14	— 8.92	N.
	3		D.	18.81	13.06	11.00	9.19	7.48						
	†4	π Cephei	C.	13.89	17.65	20.99	24.51	27.70	4 20.95	— 0.75	48.73	23 3 31.47	4.11	
	5	B. A. C., 8154, 1st star	C.	23.80	24.65	25.45	26.32	27.20	17 25.48	0.02	48.74	23 16 36.72	7.11	
	6	B. A. C., 8154, 2d star	B.	1.09	1.99	2.93	3.84	6.50	17 26.46	0.02	48.74	23 16 37.70	7.11	
	7		D.	45.27	48.20	49.12	49.92	50.77						
	8	B. A. C, 8213	C.	11.50	27.30	41.50	57.00	10.50	28 41.56	3.01	48.75	23 27 49.80	1.83	
	9		C.	31.76	32.85	33.84	34.84	35.92						
	10	δ Sculptoris	D.	55.78	58.89	59.99	0.97	1.97	42 59.39	25.57	48.76	23 41 45.06	7.37	
	11		E.	21.77	22.71	25.81	26.80	27.77						
	12	Weisse, 916	C.	26.47	27.41	28.18	29.38	30.17	46 39.62	11.26	48.76	23 45 39.60	7.20	
	13		D.	47.63	50.48	51.33	52.17	52.99						
	14	B. A. C., 8336	C.	35.20	48.70	0.70	14.00	26.20	54 0.96	2.60	48.77	23 53 9.59	7.16	
	15		B.	20.23	21.11	21.88	22.83	25.62						
	16	Neptune	C.	43.12	43.92	44.81	45.67	46.47	58 44.78	0.04	48.77	23 57 55.97	- -	
	17		D	4.06	6.66	7.60	8.41	9.36						
	18		B.	37.59	38.53	39.56	40.50	43.77						
	19	α Andromedæ	C.	3.50	4.47	5.51	6.51	7.51	2 5.49	0.12	48.77	0 1 16.61	7.34	
	20		D.	27.39	30.45	31.37	32.42	33.34						
	21		B.	17.45	18.44	19.41	20.26	23.21						
	22	35 Piscium	C.	40.57	41.57	42.47	43.26	44.16	8 42.43	0.06	48.78	0 7 53.60	7.35	
	23		D.	1.79	4.57	5.58	6.47	7.26						
	24		B.	10.61	11.46	12.43	13.26	16.10						
	25	Weisse, 202	C.	33.93	34.76	35.61	36.43	37.31	13 35.66	0.03	48.78	0 12 46.80	7.39	
	26		D.	55.34	58.05	59.00	59.90	0.70						
	27	Weisse, 229	C.	40.14	41.14	42.08	42.97	43.81	14 42.03	0.08	48.78	0 13 53.17	7.40	
	28	Weisse, 233	C.	52.37	53.36	54.22	55.01	55.85	14 54.16	0.08	48.78	0 14 5.30	7.40	
	29	Groombridge, 67	C.	36.00	48.00	59.00	9.50	20.50	23 58.60	2.22	48.79	0 23 7.59	16.33	
	30		B.	48.68	50.17	51.91	53.34	58.13						
	31	α Cassiopeæ	C.	29.00	30.84	32.26	33.81	35.45	33 32.30	0.26	48.79	0 32 43.25	8.46	
	32		D.	6.43	11.35	12.92	14.37	15.81						
	33		B.	41.41	42.29	43.12	43.97	46.87						
	34	e Piscium	C.	4.22	5.10	6.10	6.93	7.73	2 6.01	0.05	48.82	1 1 17.14	7.64	
	35		D.	25.21	27.89	28.87	29.83	30.67						
	36		B.	51.82	52.69	53.69	54.62	57.37						
	37	35 Ceti	C.	14.67	15.58	16.43	17.37	18.14	6 16.48	— 0.04	48.82	1 5 27.62	7.64	
	38		D.	35.79	38.39	39.41	40.22	41.07						
	39		A.	5.70	42.00	18.00	6.50	49.00						
	40		B.	33.50	11.00	48.30	25.00	- -						
	41	Polaris	C.	56.00	33.00	6.00	46.00	20.00	10 0.50	+ 0.47	48.82	1 9 12.15	69.43	
	42		D.	40.00	54.00	32.50	5.00	41.00						
	43		E.	25.00	5.00	47.00	24.50	5.00						
	44	Weisse, 197	C.	2.37	3.21	3.99	4.95	5.81	14 15.19	— 11.26	48.83	1 13 15.10	7.70	
	45		D.	23.07	25.81	26.71	27.57	28.43						
	46	Weisse, 569	C.	49.17	50.07	50.95	51.87	52.76	33 62.40	11.50	48.84	1 32 2.06	8.02	
	47		D.	10.67	13.02	14.19	15.21	16.08						
	48	Anonymous, +11° 24′	C.	36.77	37.62	38.47	39.28	40.08	34 38.44	0.07	48.84	1 33 49.53	8.03	
	49		B.	59.12	0.63	2.08	3.50	7.67						
	50	A. Z. N., 153. 111	C.	34.35	35.71	37.07	38.44	39.53	4 36.95	— 0.25	—48.86	2 3 47.84	— 10.18	
	51		D.	6.22	10.51	11.87	13.13	14.41						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
	h. s.	s.	s.	s.	s.
Dec. 6, 0.2	— 48.78	— 0.045	+ 0.030	— 0.115	— 0.073

4. The recorded time has been increased 5*s*.

December 6. 2*h*. 45*m*. Image west *r.* 0.02.

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s	s	m. s.	m. s.	s.	h. m. s.	s.	
	1		B.	49.17	49.99	50.91	51.77	54.50						
Dec. 6	2	Weisse, 158	C.	12.00	12.95	13.82	14.77	15.59	12 13.87	— 0.06	—48.87	2 11 24.94	-- 8.16	N
	3		D.	33.25	35.99	36.93	37.78	38.61						
	4		B.	34.16	35.05	36.11	37.06	39.97						
	5	B. Z, 27.25	C.	58.71	59.67	0.67	1.74	2.61	20 0.70	0.11	48.87	2 19 11.72	8.75	
	6		D.	21.43	24.37	25.43	26.30	27.17						
	7		B.	47.69	48.58	49.47	50.29	53.43						
	8	B. Z., 27.26	C.	11.94	12.93	13.92	14.95	15.87	20 14.04	0.11	48.87	2 19 25.06	8.75	
	9		D.	34.81	37.77	38.69	39.63	40.63						
	10		B.	35.16	35.89	36.80	37.65	40.30						
	11	Weisse, 585	C.	57.89	58.77	59.67	0.56	1.38	34 59.67	0.05	48.88	2 34 10.74	8.16	
	12		D.	18.96	21.57	22.61	23.51	24.40						
	13		B.	22.13	23.11	23.97	25.08	27.88						
	14	B. Z, 391.44	C.	46.70	47.59	48.43	49.32	50.33	37 48.48	— 0.11	48.88	2 36 59.49	— 8.84	
	15		D.	8.99	12.05	12.97	13.87	14.76						
	16		B.	26.27	22.77	18.98	15.76	5.61						
	17	β Ursæ Minoris, S. P.	C.	59.61	55.61	52.51	49.21	46.14	51 52.71	+ 0.73	48.90	14 51 4.54	+ 4.78	
	18		D.	39.86	29.51	25.82	23.06	19.99						
	19		B.	30.35	31.23	32.17	33.07	35.71						
	†20	α Ceti	C.	53.11	53.97	54.87	55.78	56.69	55 54.92	— 0.06	48.90	2 55 5.96	— 8.22	
	21		D.	14.10	16.87	17.73	18.67	19.52						
	†22	δ Arietis	C.	33.71	34.78	35.64	36.49	37.50	4 47.54	11.94	48.91	3 3 46.69	8.95	
	†23		D.	56.08	58.89	59.91	0.79	1.63						
	24		B.	43.47	44.94	46.09	47.60	51.83						
	25	α Persei	C.	18.79	19.86	21.24	22.59	24.07	15 21.28	0.25	48.92	3 14 32.11	11.41	
	26		D.	50.81	55.01	56.33	57.62	59.02						
	27	24 Tauri	C.	58.38	59.34	0.36	1.31	2.26	40 12.61	12.35	48.94	3 39 11.32	9.19	
	28		D.	21.40	24.47	25.32	26.17	27.08						
	29		C.	6.36	7.35	8.42	9.47	10.31						
	30	η Tauri	D.	29.36	32.30	33.31	34.16	35.08	40 32.83	24.57	48.94	3 39 19.32	9.39	
	31		E.	54.16	55.24	57.99	59.00	59.88						
	32	27 Tauri	B.	22.07	23.09	24.06	24.91	28.07	41 48.90	0.11	48.94	3 40 59.85	9.42	
	33		D.	9.80	12.83	13.77	14.69	15.71						
	34	28 Tauri	C.	48.20	49.26	50.08	50.97	51.88	41 50.08	0.11	48.94	3 41 1.03	9.42	
	35		B.	1.41	2.26	3.17	4.26	6.86						
	36	γ^1 Eridani	C.	24.67	25.81	26.71	27.57	28.41	52 26.66	0.00	48.96	3 51 37.70	7.64	
	37		D.	46.43	49.17	50.17	51.08	51.90						
	38		B	23.17	24.17	25.00	26.26	29.61						
	39	ι Aurigæ	C.	50.11	51.21	52.11	53.21	54.25	48 52.26	0.14	48.99	4 48 3.13	10.41	
	40		D.	15.17	18.27	19.32	20.48	21.58						
	41		B.	9.52	10.35	11.24	12.23	15.17						
	42	Uranus	C.	33.81	34.83	36.08	36.94	37.71	52 35.96	0.10	48.99	4 51 46.87	- -	
	43		D.	56.67	59.79	0.79	1.73	2.56						
	44		B.	1.88	2.83	3.75	4.75	7.71						
	45	ε Leporis	C.	26.60	27.62	28.56	29.56	30.42	0 28.50	0.00	49.00	5 0 39.50	7.20	
	46		D.	49.28	52.30	53.20	54.00	55.00						
	47		B.	49.61	50 51	51.47	52.36	55.08						
7	48	ε Pegasi	C.	12.69	13.63	14.51	15.44	16.28	38 14.53	0.04	49.81	21 38 24.68	6.15	Y.
	49		D.	33.94	36.74	37.71	38.57	39.40						
	50		B.	9.90	10.76	11.71	12.80	15.87						
	51	16 Pegasi	C.	34.88	35.97	37.05	37.91	38.97	47 37.03	— 0.06	—49.81	21 47 47.16	— 5.66	
	52		D.	58.17	1.42	2.42	3.31	4.25						

20. Set B. perhaps too late.
22–23. Very tremulous.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
Dec. 6, 0.2	— 48.78	— 0.045	+ 0.030	— 0.115	— 0.073

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
	1		B.	7.46	8.31	9.22	10.11	12.84						
Dec. 7	2	α Aquarii	C.	30.19	31.07	31.89	32.85	33.73	59 31.98	— 0.03	—49.82	21 58 42.13	— 6.58	Y.
	3		D.	51.11	53.93	54.81	55.72	56.48						
	4		A.	59.48	0.42	1.41	4.27	5.25						
	5		B.	23.21	24.08	25.06	25.95	28.62						
	†6	Moon's 1st Limb	C.	46.54	47.48	48.42	49.31	50.13	8 48.39	0.00	49.82	22 7 58.57	. .	
	7		D.	8.18	10.95	11.88	12.73	13.58						
	8		E.	31.62	32.54	35.35	36.22	37.11						
	9	θ Aquarii	D.	42.67	45.46	46.49	47.43	48.21	10 57.31	34.00	49.82	22 9 33.48	6.84	
	10		E.	5.71	6.54	9.31	10.21	11.04						
	11		B.	21.64	22.56	23.47	24.31	27.11						
	12	ρ Aquarii	C.	44.70	45.61	46.51	47.45	48.22	13 46.51	— 0.02	49.82	22 12 56.66	6.85	
	13		D.	5.94	8.67	9.67	10.49	11.31						
	14		A.	46.33	47.31	48.21	50.91	51.87						
	15	ζ^1 Aquarii	C.	32.00	32.95	33.91	34.83	35.62	22 33.81	+ 0.05	49.83	22 21 44.04	6.73	
	16		E.	15.87	16.73	19.42	20.24	21.03						
	17	ζ^2 Aquarii	B.	9.34	10.28	11.21	12.11	14.73	22 33.98	— 0.03	49.83	22 21 44.12	6.73	
	18		D.	53.11	55.83	56.86	57.70	58.60						
	19		A.	18.71	19.69	20.53	23.29	24.27						
	20		B.	41.68	42.62	43.53	44.42	47.17						
	21	η Aquarii	C.	4.47	5.37	6.27	7.12	8.00	29 6.25	0.00	49.83	22 29 16.42	6.75	
	22		D.	25.47	28.20	29.13	30.04	30.82						
	23		E.	48.22	49.11	51.82	52.72	53.51						
	24		B.	22.43	23.33	24.26	25.13	27.81						
	25	Lalande, 44272	C.	45.37	46.31	47.20	47.99	48.84	32 47.16	0.04	49.83	22 31 57.29	6.59	
	26		D.	6.42	9.11	10.16	11.08	11.91						
	27		B.	30.80	31.77	32.74	33.63	36.46						
	28	Lalande, 44279	C.	53.83	54.75	55.53	56.47	57.33	32 55.66	0.04	49.83	22 32 5.79	6.59	
	29		D.	14.94	17.83	18.73	19.58	20.48						
	30		B.	42.21	43.13	44.07	44.97	47.76						
	31	τ^2 Aquarii	C.	5.77	6.70	7.57	8.55	9.41	43 7.61	0.02	49.84	22 42 17.75	7.07	
	32		D.	27.41	30.31	31.23	32.08	32.99						
	33		B.	43.17	44.13	44.99	45.92	48.80						
	34	Weisse, 1082	C.	6.37	7.31	8.22	9.14	9.97	53 8.23	0.04	49.84	22 52 18.34	6.69	
	35		D.	27.71	30.54	31.51	32.41	33.22						
	36		B.	43.84	44.78	45.67	46.52	49.28						
	37	Weisse, 1159	C.	7.16	8.08	8.93	9.85	10.71	56 8.85	0.04	49.84	22 55 18.97	6.70	
	38		D.	28.34	31.27	32.23	33.11	34.02						
	39	Weisse, —12	E.	58.87	59.78	2.98	3.87	4.74	4 2.05	45.96	49.85	23 2 26.24	7.11	
	40		B.	57.00	57.90	58.80	59.71	2.51						
	41	Weisse, XXIII, —14	C	20.42	21.31	22.26	23.12	23.97	3 22.19	0.02	49.85	23 2 32.32	7.11	
	42		D.	41.83	44.56	45.51	46.60	47.38						
	43		C.	23.78	24.76	25.58	26.54	27.34						
	44	Piazzi, XXIII, —21	D.	44.71	47.54	48.49	49.36	50.20	9 48.01	— 22.44	49.85	23 8 35.72	6.96	
	45		E.	7.49	8.40	11.08	11.97	12.85						
	46	Weisse, 443	B.	57.51	58.37	59.32	0.21	2.78	23 10.86	+ 11.18	49.86	23 22 32.18	7.04	
	47		C	20.24	21.12	22.08	23.07	23.91						
	48		C.	41.06	41.91	42.87	43.77	44.58						
	49	Weisse, 449	D.	2.08	4.82	5.78	6.58	7.39	24 5.29	— 22.44	49.86	23 22 52.99	7.05	
	50		E.	24.81	25.67	28.46	29.34	30.17						
	51		B.	17.36	18.24	19.18	20.17	22.83						
	52	ι Piscium	C.	40.17	41.15	42.01	42.91	43.81	33 42.05	— 0.03	—49.86	23 32 52.15	— 7.13	
	53		D.	1.35	4.04	4.91	5.88	6.71						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
Dec. 7, 23.4	— 49.86	— 0.030	+ 0.042	— 0.041	— 0.073

6 Fine observation.
Azimuth from Polaris and θ^1 Ceti.

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s	s.	h. m. s.	s.	
	1		A.	53.00	39.00	26.00	44.50	26.50						
	2		B.	55.00	40.00	25.50	12.50	29.50						
Dec. 7	3	B. A. C., 4070, S. P.	C.	57.50	42.00	28.50	14.50	1.50	58 29.22	+ 1.34	—49.87	11 57 40.69	— 3.34	Y.
	4		D.	27.00	45.50	30.00	17.00	4.00						
	5		E.	30.50	15.50	35.50	22.00	8.00						
	6	B. A. C., 4165, S. P.	C.	59.00	25.00	52.00	18.50	- -	15 8.62	— 12.12	49.88	12 14 6.62	+ 13.63	
	7	B. A. C., 240	C.	7.00	38.00	7.00	39.00	7.00	48 7.60	3.83	49.90	0 47 13.87	— 45.42	
	8		A.	4.00	40.00	16.00	4.00	47.00						
	9		B.	29.00	7.00	45.00	21.00	10.00						
	†10	Polaris	C.	51.00	30.00	4.00	43.00	16.00	10 4.60	- -	- -	- - - -	- -	
	11		D.	1.00	51.00	31.00	6.00	41.00						
	12		E.	24.00	2.00	49.00	24.00	59.00						
	13		C.	57.05	58.06	59.02	59.91	0.76						
	14	θ^1 Ceti	D.	18.39	21.21	22.15	23.07	23.93	18 21.69	22.70	49.91	1 17 9.07	7.53	
	15		E.	41.51	42.55	45.08	45.91	46.80						
	16		B.	26.87	27.86	28.77	29.63	32.69						
	17	β Arietis	C.	50.95	52.05	52.99	53.94	54.86	47 53.02	0.05	49.93	1 47 3.04	8.38	
	18		D.	13.36	16.49	17.41	18.30	19.18						
	19		B.	55.89	56.79	57.69	58 67	1.40						
	20	B. A. C., 663	C.	18.81	19.71	20.56	21.47	22.32	3 20.57	0.03	49.94	2 2 30.60	8.02	
	21		D.	39.82	42.62	43.47	44.26	45.12						
	22		B	15.24	16.08	16.90	17.77	20.71						
	23	Rumker, 568	C.	38.88	39.86	40.71	41.71	42.58	8 40.84	0.05	49.94	2 7 50.85	8.46	
	24		D.	0.91	3.91	4.82	5.77	6.71						
	25		C.	13.16	14.12	15.08	15.87	16.79						
	26	Weisse, 158	D.	34.39	37.18	38.13	38.96	39.85	12 37.66	22.64	49.94	2 11 25.08	8.16	
	27		E.	57.47	58.43	0.97	1.81	2.64						
	28		B.	16.57	17.39	18.31	19.26	22.00						
	29	ξ^2 Ceti	C.	39.50	40.54	41.39	42.35	43.13	21 41.33	0.04	49.95	2 20 51.35	— 8.22	
	30		D.	0.61	3.34	4.28	5.29	6.07						
	31		B.	1.15	2.09	2.90	3.88	6.69						
8	32	ζ Pegasi	C.	24.31	25.16	26.05	27.04	27.86	35 26.11	0.06	50.78	22 34 35.27	- -	N.
	33		D.	45.58	48.44	49.28	50.16	51.03						
	34	γ Piscis Australis	B.	12.82	13.95	15.01	16.12	19.61	45 15.50	- -	- -	- - - -	- -	
	†35	Moon's 1st Limb	D.	47.53	49.83	50.78	51.70	52.65	56 50.52	22.95	50.79	22 55 36.78	- -	
	36		D.	8.50	18.84	22.81	26.05	29.18						
	37	β Ursæ Minoris	E.	35.43	38.57	48.72	51.49	54.88	54 3.45	2 7.54	51.26	14 51 4.65	+ 4.68	
	38		B.	13.66	14.73	15.67	16.77	19.78						
	†39	α Coronæ Borealis	C.	39.41	40.32	41.34	42.41	43.41	29 41.37	0.05	51.27	15 29 50.05	- -	
	40		D.	3.04	6.16	7.02	7.97	8.84						
	41		B.	40.16	40.85	41.70	42.67	45.91						
9	†42	Sun's 1st Limb	C.	4.57	5.76	6.57	7.37	8.25	6 6.61	0.10	51.34	17 5 15.17	- -	
	43		D.	27.51	30.57	31.56	32.41	33.26						
	44		B.	1.67	2.63	3.62	4.54	7.56						
	45	Sun's 2d Limb	C.	26.36	27.42	28.36	29.37	30.21	8 28.40	0.10	51.34	17 7 36.96	- -	
	46		D.	49.00	52.47	53.33	54.31	55.21						
	47		B.	34.62	35.87	37.12	38.27	41.63						
	48	α Lyræ	C.	3.62	5.03	6.07	7.28	8.27	33 6.16	0.05	51.36	18 32 14.75	— 2.97	
	49		D.	30.77	34.11	35.47	36.56	37.65						
	50		B.	8.25	9.30	10.21	11.22	14.10						
	†51	Venus, 1st Limb	C.	32.86	33.77	34.73	35.71	36.66	32 34.73	— 0.10	—51.47	20 31 43.96	- -	
	52		D.	55.15	58.27	59.34	0.28	1.07						

10. Steady.
35. Uncertain; a momentary glimpse through moving clouds.
39. Faint and tremulous.
42. Very unsteady.
51. Correction for semi-diameter, +0.80 s.

Dec. 7. 2h. 30m. Image west 0.02 r. Clamp west. Fine night; stars steady.
Dec. 8–9. The azimuth from Polaris, of Dec. 9th.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m.	n.	c.
h.	s.	s.	s.	s.	s.
Dec. 8, 22.6	— 50.78	— 0.029	- -	+ 0.057	— 0.073
9, 0.7	— 51.68	— 0.052	- -	- -	- -

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
	1		B.	59.67	0.99	2.28	3.63	7.33						
Dec. 9	2	α Cygni	C.	31.83	33.22	34.52	35.68	36.85	37 34.39	— 0.05	—51.47	20 36 42.87	— 3.40	N.
	3		D.	1.31	5.24	6.57	7.82	8.97						
	4		B.	25.27	26.21	27.21	28.23	31.31						
	5	α Piscis Australis	C.	51.47	52.58	53.62	54.67	55.56	50 53.59	0.12	51.59	22 50 1.88	— 7.40	
	6		D.	15.81	18.95	20.07	20.96	21.93						
	†7	B. A. C., 8026	C.	55.57	3.95	11.91	19.82	27.47	56 11.74	0.14	51.59	22 55 20.01	+ 1.97	
	8		C.	43.81	44.70	45.54	46.51	47.36						
	9	α Pegasi	D.	5.47	8.18	9.20	10.09	10.95	59 8.72	23.18	51.60	22 57 53.95	— 6.67	
	10		E.	28.97	29.80	32.58	33.42	34.29						
	11		B.	49.79	52.99	56.51	59.94	10.07						
	12	π Cephei	C.	15.58	19.42	22.61	25.81	28.91	4 22.53	0.06	51.60	23 3 30.87	3.94	
	13		D.	34.77	45.27	48.85	52.21	55.30						
	14		B.	28.57	29.43	30.34	31.33	33.95						
	15	γ Piscium	C.	51.33	52.18	53.14	54.06	54.88	10 53.15	0.07	51.61	23 10 1.47	7.01	
	16		D.	12.36	15.04	16.03	16.91	17.72						
	17		B.	19.14	20.03	20.89	21.81	24.57						
	†18	ι Piscium	C.	41.91	42.92	43.76	44.70	45.52	33 43.79	0.07	51.57	23 32 52.15	7.11	Y.
	19		D.	2.97	5.77	6.77	7.64	8.49						
	20		B.	11.39	12.16	13.00	14.03	16.57						
	21	Moon's 1st Limb	C.	34.57	35.55	36.41	37.41	38.19	42 36.39	0.08	51.64	23 41 44.67	- -	N.
	22		D.	55.99	58.76	59.71	0.64	1.51						
	23		C.	55.20	56.09	56.97	57.87	58.78						
	24	26 Piscium	D.	16.31	19.10	19.98	20.78	21.64	49 19.52	22.61	51.66	23 48 5.25	7.16	
	25		E.	39.20	40.16	42.77	43.58	44.41						
	26		B.	41.66	42.56	43.46	44.36	47.08						
	27	ω Piscium	C.	4.52	5.45	6.31	7.20	8.05	53 6.34	0.07	51.65	23 52 14.62	7.20	
	28		D.	25.70	28.43	29.31	30.12	30.94						
	29		B.	22.26	23.19	24.20	25.06	27.70						
	30	Neptune	C.	45.08	45.97	46.87	47.77	48.61	58 46.90	0.08	51.65	23 57 55.17	- -	
	31		D.	6.11	8.83	9.73	10.67	11.46						
	32		B.	20.45	21.35	22.23	23.25	25.98						
	33	35¹ Piscium	C.	43.47	44.34	45.26	46.17	46.94	8 45.26	0.08	51.66	0 7 53.52	7.31	
	34		D.	4.59	7.36	8.31	9.15	10.00						
	35	35² Piscium	E.	28.10	28.93	31.57	32.46	33.31	9 30.87	45.32	51.66	0 7 53.89	7.31	
	36		B.	58.01	58.86	59.76	0.67	3.44						
	37	d Piscium	C.	20.86	21.92	22.78	23.68	24.48	14 22.76	0.07	51.66	0 13 31.03	7.33	
	38		D.	42.10	44.98	45.76	46.61	47.49						
	39		B	16.87	17.72	18.73	19.71	22.51						
	40	Rumker, 568	C.	40.58	41.68	42.61	43.45	44.29	8 42.57	0.06	51.76	2 7 50.75	8.44	
	41		D.	2.87	5.63	6.47	7.31	8.17						
	42	Weisse, 158	C.	14.89	15.81	16.77	17.59	18.45	12 16.70	0.07	51.77	2 11 24.86	8.13	
	43	B. A. C., 740	C.	- -	- -	58.36	4.88	10.42	19 4.55	5.83	51.77	2 18 6.95	23.91	
	44		B.	38.20	39.11	40.12	40.98	43.57						
	†45	γ Ceti	C.	1.09	1.96	2.87	3.72	4.61	37 2.86	0.07	51.79	2 36 11.00	8.10	
	46		D.	22.12	24.79	25.65	26.57	27.50						
	47	Victoria	C.	58.17	59.11	0.07	0.93	1.79	44 0.01	0.06	51.79	2 43 8.16	- -	
	48	✡ (10) +14° 49′	C.	9.29	10.24	11.17	12.00	12.91	49 11.12	0.06	51.79	2 48 19.27	8.63	
	49	✡ (10) +14° 49′	C	27.02	27.86	28.67	29.54	30.44	49 28.71	0.06	51.79	2 48 36.86	— 8.63	
	50	β Ursæ Minoris, S. P.	C.	49.39	52.87	56.21	59.61	2.89	52 38.70	— 42.46	—51.79	14 51 4.45	+ 4.64	
	51		D.	8.94	19.18	22.77	25.92	29.21						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
Dec. 9, 0.7	— 51.68	— 0.052	- -	+ 0.057	— 0.073

7. Very steady.
18. +0.06 s. applied to the clock error for personal equation.
45. Set B. uncertain.

Dec. 9. 3*h.* 10*m.* Image west 0.07 r. Clamp west.

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s	s.	
	1		B.	33.21	34.20	35.15	35.97	38.70						
Dec. 9	2	α Ceti	C	56.11	56.96	57.84	58.72	59.51	55 57.88	— 0.07	—51.80	2 55 6.01	— 8.23	N.
	3		D.	17.09	19.85	20.77	21.63	22.54						
	4		B.	12.39	13.19	14.31	15.16	18.07						
	5	δ Arietis	C.	36.48	37.41	38.45	39.37	40.39	4 38.40	0.06	51.80	3 3 46.54	8.96	
	6		D.	58.66	1.63	2.51	3.52	4.43						
	7	B. A. C., 1061	C.	26.00	41.50	53.50	7.50	20.50	22 53.80	0.30	51.82	3 22 1.68	59.96	
	8		B.	34.58	35.68	36.70	37.67	40.60						
	9	18 (Bessel) Pleiadum	C.	59.63	0.58	1.47	2.43	3.32	40 1.55	0.06	51.84	3 39 9.65	9.41	
	10		D.	22.56	25.51	26.51	27.51	28.46						
	11		B.	44.49	45.41	46.48	47.31	50.31						
	12	η Tauri	C.	9.46	10.34	11.29	12.27	13.12	40 11.32	0.06	51.84	3 39 19.42	9.41	
	13		D.	32.25	35.36	36.31	37.24	38.16						
	14		B.	4.13	5.12	6.05	6.99	9.71						
	15	γ^1 Eridani	C.	27.62	28.55	29.50	30.43	31.34	52 29.50	0.09	51.85	3 51 37.56	7.66	
	16		D.	49.30	51.99	53.06	53.93	54.78						
	17		B.	- -	9.71	10.65	11.57	14.21						
	18	Juno	C.	31.67	32.63	33.46	34.25	35.11	10 33.62	0.26	51.86	4 9 41.50	- -	
	19		D.	52.62	55.28	56.37	57.20	58.09						
	20		B.	39.58	40.38	41.30	42.26	45.29						
	21	Uranus	C.	4.00	5.03	5.87	6.87	7.82	52 6.02	0.06	51.90	4 51 14.06	- -	
	22		D	26.81	29.83	30.78	31.75	32.70						
	23		C.	46.95	48.13	49.16	50.07	50.97						
	†24	α Scorpii	D.	10.49	13.68	14.58	15.49	16.41	22 14.05	25.06	52.37	16 20 56.62	6.78	
	25		E.	35.69	36.93	39.89	40.72	41.53						
	26		B.	4.92	6.05	7.15	8.06	10.87						
10	27	Sun's 1st Limb	C.	29.63	30.60	31.71	32.96	33.81	10 31.81	0.10	52.41	17 9 39.30	- -	
	28		D.	52.75	55.72	56.76	57.66	58.46						
	29		B.	7.11	8.11	9.07	9.85	12.66						
	30	Sun's 2d Limb	C.	31.61	32.59	33.62	34.67	35.47	12 33.65	0.10	52.41	17 12 1.14	- -	
	31		D.	54.49	57.32	58.54	59.48	0.23						
	32		B.	35.87	36.90	38.06	39.31	42.81						
	33	α Lyræ	C.	4.98	6.13	7.14	8.37	9.43	33 7.27	0.05	52.47	18 32 14.75	2.97	
	34		D.	31.99	35.24	36.43	37.71	38.76						
	35		B.	29.45	30.35	31.38	32.39	35.34						
	†36	Venus, 1st Limb	C.	53.87	54.81	55.82	56.81	57.63	36 55.85	— 0.10	52.58	20 36 4.03	- -	
	37		D.	16.46	19.26	20.33	21.54	22.34						
	38		A.	51.76	52.72	53.54	56.28	57.31						
	39	59 Pegasi	B.	14.78	15.73	16.62	17.51	20.21	5 16.93	+ 22.65	52.70	23 4 46.85	6.80	Y.
	40		C.	37.64	38.62	39.51	40.43	41.26						
	†41	☉ (8.9) +8° 2′	D.	5.35	8.14	9.11	9.99	10.81	6 19.94	— 33.96	52.70	23 4 53.27	6.80	
	†42		E.	28.27	29.29	31.95	32.80	33.72						
	†43		A.	6.68	7.55	8.53	11.19	12.22						N.
	44	γ Piscium	C.	52.32	53.24	54.10	55.00	55.83	11 5.37	11.25	52.70	23 10 11.42	6.99	Y.
	45		D	13.31	16.08	17.12	17.94	18.79						
	46		E.	36.21	37.22	39.82	40.70	41.51						N.
	47		B.	20.47	21.38	22.34	23.20	25.88						Y.
	48	κ Piscium	C.	43.23	44.23	45.04	45.89	46.82	20 45.08	— 0.03	52.70	23 19 52.35	6.99	
	49		D.	4.21	6.99	8.00	8.87	9.68						
	50		A.	30.23	31.21	32.06	35.08	36.08						Y.
	51		B.	55.00	55.92	56.83	57.81	0.83						N.
	52	100 Aquarii	C.	19.48	20.59	21.55	22.56	23.33	25 21.34	+ 0.03	—52.70	23 24 28.67	— 7.23	
	53		D.	42.11	44.99	46.13	47.08	48.04						
	54		E.	6.68	7.71	10.53	11.46	12.33						Y.

24. Faint.

36. Correction for semi-diameter, +0.86 s.

41–42. 4′ to northward of last.

43. γ Piscium, 100 Aquarii, and the five stars following were observed for personal equation. Only Y.'s observations are reduced here.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m.	n.	c.
h.	s.	s.	s.	s.	s.
Dec. 10, 19.4	— 52.52	— 0.052	- -	+ 0.057	— 0.073
23.5	— 52.70	— 0.021	+ 0.042	+ 0.039	— 0.073

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
	1		A.	30.65	31.55	32.47	35.08	35.99						N.
	2		B.	53.68	54.53	55.47	56.46	59.10						Y.
Dec. 10	3	B. A. C., 8214	C.	16.71	17.62	18.54	19.41	20.26	29 18.53	— 0.04	—52.70	23 28 25.80	— 7.08	
	4		D.	37.98	40.71	41.63	42.51	43.32						
	5		E.	0.83	1.88	4.46	5.44	6.32						N.
	6		B.	20.57	21.58	22.53	23.42	26.31						Y.
	7	B. A. C., 8225	C.	44.41	45.25	46.16	47.11	47.98	31 46.21	0.04	52.70	23 30 53.47	7.16	N.
	8		D.	6.11	9.06	10.00	10.82	11.75						Y.
	9		A.	28.48	29.53	30.39	33.29	34.27						N
	10		B.	52.57	53.52	54.53	55.51	58.37						Y.
	11	A¹ Aquarii	C.	16.67	17.69	18.65	19.47	20.45	35 18.62	— 0.05	52.70	23 34 25.87	7.20	
	12		D.	38.98	41.87	42.77	43.68	44.53						
	13		E.	2.93	4.00	6.79	7.75	8.61						N.
	14		A.	53.99	54.94	55.87	58.77	59.83						Y.
	15		B.	18.35	19.30	20.37	21.27	24.24						N.
	16	i^2 Aquarii	C.	42.62	43.56	44.52	45.53	46.37	39 44.32	+ 0.03	52.70	23 38 51.65	7.23	
	17		D.	4.81	7.64	8.75	9.61	10.52						
	18		E.	28.95	29.91	32.74	33.61	34.57						Y.
	19		A.	28.87	29.83	30.79	33.61	34.77						N.
	20		B	53.22	54.23	55.17	56.07	59.14						Y.
	21	B. A. C, 8287	C.	17.66	18.68	19.61	20.57	21.39	44 19.58	— 0.05	52.70	23 43 26.83	7.23	
	22		D.	40.08	43.07	44.04	44.96	45.87						
	23		E.	4.48	5.57	8.35	9.31	10.17						N.
	24		B.	33.37	34.21	35.12	35.96	38.71						Y.
	25	26 Piscium	C.	56.24	57.09	57.91	58.87	59.71	48 58.00	0.03	52.70	23 48 5.27	7.14	
	26		D.	17.31	20.01	20.97	21.83	22.77						
	27		B.	42.61	43.48	44.35	45.24	47.98						
	28	ω Piscium	C.	5.51	6.48	7.32	8.24	9.05	53 7.33	— 0.03	52.71	23 52 14.60	7.18	
	29		D.	26.62	29.35	30.57	31.21	32.00						
	30		B.	23.30	24.21	25.11	25.95	28.83	58 36.72	+ 11.18	52.71	23 57 55.19	- -	
	31	Neptune	C.	46.25	47.11	47.93	48.80	49.68						
	32		A.	32.98	33.96	34.93	37.67	38.65						
	33		B.	56.53	57.53	58.57	59.51	2.30						
	†34	Moon's 1st Limb	C.	20.15	21.11	21.97	22.93	23.77	28 21.89	0.00	52.72	0 27 29.18	- -	
	35		D.	41.67	44.39	45.41	46.36	47.20						
	36		E.	5.00	5.93	8.77	9.64	10.46						
	†37	Polaris	C.	51.00	29.00	3.00	40.00	14.00	10 3.40	- -	- -	- - - -	- -	
	38		C.	16.91	17.83	18.78	19.77	20.82						N.
11	†39	Sun's 2d Limb	D.	39.66	42.56	43.56	44.47	45.44	17 43.20	— 24.22	53.77	17 16 25.21	- -	
	40		E.	4.46	5.55	8.36	9.47	10.43						
	41		B.	41.63	42.61	43.57	44.40	47.15						
	42	Weisse, 613	C.	4.66	5.54	6.39	7.27	8.07	31 6.37	+ 0.07	54.12	23 30 12.32	7.04	
	43		D	25.68	28.18	29.26	30.19	30.98						
	44		B.	52.84	53.69	54.71	55.55	58.25						
	45	Lamont, 2824	C.	15.59	16.37	17.21	18.21	18.99	33 17.41	+ 0.07	54.12	23 32 23.36	7.07	
	46		D.	36.73	39.53	40.37	41.17	41.97						
	47		C.	37.08	38.11	38.98	39.91	40.94						
	48	δ Sculptoris	D.	0.93	3.83	4.87	6.06	7.21	43 4.59	— 25.49	54.13	23 41 44.97	7.30	
	49		E.	26.92	28.12	31.07	31.98	32.91						
	50		B.	8.78	9.80	10.80	11.75	14.41						
	†51	Weisse, 916	C.	31.77	32.71	33.61	34.41	35.24	46 33.60	+ 0.07	54.13	23 46 39.54	7.13	
	52		D.	52.48	55.16	56.17	58.07	58.91						
	53		B.	43.80	44.87	45.71	46.54	49.47						
	54	ω Piscium	C.	6.88	7.77	8.71	9.57	10.37	53 8.65	+ 0.05	—54.14	23 52 14.57	— 7.18	
	55		D.	27.91	30.61	31.70	32.54	33.37						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
Dec. 11, 1.1	— 54.21	— 0.057	+ 0.137	— 0.095	— 0.073

34, 37. Through clouds.
39. Observed with clamp east.
51. Very faint.
Azimuth cor., Dec. 10, 11, 12, 13, and 14, from Polaris and clock stars.

		r.	
Dec. 10.	Image west	0.10.	Clamp west.
1*h.* 30*m.*	Image west	0.10.	Clamp east.
Dec. 11.	Image west	0.09.	Clamp east.
23*h.* 0*m.*	Image west	0.09.	Clamp west. Image indistinct, owing to a high wind.

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DATE	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
	1		B.	24.80	25.67	26.54	27.47	30.24						
Dec. 11	2	Neptune	C.	47.56	48.52	49.33	50.22	51.07	58 49.36	+ 0.07	—54.14	23 57 55.29	- -	N.
	3		D.	8.57	11.27	12.15	13.05	13.90						
	4	α Andromedæ	C.	8.81	9.86	10.81	11.71	12.74	2 10.79	0.00	54.15	0 1 16.64	— 7.27	
	5		B.	9.74	10.60	11.46	12.24	15.00						
	6	☆ (9.10) —4° 42′	C.	32.45	33.41	34.34	35.26	36.17	38 34.34	0.07	54.18	0 37 40.23	7.38	
	7		D.	53.63	56.42	57.25	58.10	59.04						
	8	☆ (9.10) —4° 32′	C.	3.30	4.30	5.18	6.11	6.88	39 5.15	+ 0.07	54.18	0 38 11.04	7.39	
	9	☆ (9.10) —4° 33′	D.	26.51	- -	- -	31.06	31.96	39 29.84	— 22.35	54.18	0 38 13.31	7.39	
	10	Lacaille, 238	C.	47.45	48.52	49.50	50.51	51.38	46 49.47	+ 0.10	54.19	0 45 55.38	7.26	
	11		B.	10.51	11.44	12.34	13.18	16.06						
	12	B. A. C., 269	C.	33.67	34.78	35.68	36.55	37.46	51 35.69	0.04	54.20	0 50 41.53	7.66	
	13		D.	55.28	58.18	59.13	0.12	0.96						
	14		B.	17.65	18.74	19.68	20.52	23.27						
	15	ε Piscium	C.	40.78	41.62	42.54	43.42	44.21	56 42.55	+ 0.05	54.20	0 55 48.41	7.63	
	16		D.	1.91	4.63	5.56	6.53	7.27						
	†17	Polaris	C.	58.00	34.00	10.00	48.00	19.00	10 9.80	— 6.62	54.21	1 9 8.97	65.95	
	18		A.	54.08	54.92	55.87	58.66	59.47						
	19		B.	17.86	18.72	19.77	20.66	23.43						
	20	Moon's 1st Limb	C.	41.76	42.73	43.69	44.52	45.31	14 43.57	+ 0.07	54.22	1 13 49.42	- -	
	21		D.	3.96	6.37	7.44	8.41	9.30						
	22		E.	27.57	28.37	31.31	32.18	32.97						
	23		C.	1.31	2.28	3.31	4.38	5.13						
	24	θ¹ Ceti	D.	22.60	25.54	26.46	27.27	28.25	18 25.99	— 22.60	54.22	1 17 9.17	7.49	
	25		E.	45.76	46.74	49.37	50.31	51.19						
	26	ρ Piscium	E.	29.22	30.21	33.11	33.91	34.76	20 32.24	47.18	54.22	1 18 50.84	8.02	
	27	94 Piscium	E.	54.78	55.87	58.41	59.45	0.26	20 57.75	— 47.20	54.22	1 19 16.33	8.02	
	28		B.	31.37	32.29	33.11	34.07	36.95						
	29	Weisse, 569	C.	54.43	55.46	56.36	57.26	58.06	33 56.37	+ 0.04	54.23	1 33 2.18	7.97	
	30		D.	15.93	18.67	19.67	20.56	21.33						
	31	Anon., (9.10) +11° 24′	C.	42.26	43.21	44.15	44.95	45.71	34 44.06	0.04	54.23	1 33 49.79	7.98	
	32	Weisse, 672	C.	53.53	54.48	55.43	56.37	57.13	37 55.39	0.08	54.24	1 37 1.23	7.55	
	33	☆ (10) +13° 36′	C.	12.33	13.29	14.20	15.21	16.07	43 14.22	0.04	54.24	1 42 20.02	8.10	
	34	Lalande, 3344	C	34.61	35.62	36.47	37.31	38.21	43 36.44	0.04	54.24	1 42 42.24	8.10	
	†35	☆ (10) +13° 39′	C.	48.74	49.65	50.52	51.36	52.10	43 50.47	0.04	54.24	1 42 56.27	8.11	
	36		B.	7.95	8.95	9.81	10.65	13.25						
	37	Weisse, 1056	C.	30.66	31.62	32.54	33.49	34.28	0 32.53	+ 0.06	54.26	1 59 38.33	7.93	
	38		D.	51.44	54.46	55.45	56.31	57.12						
	†39	A. Z., 154.131	C.	25.20	27.10	28.54	29.63	31.20	6 28.33	— 0.12	54.27	2 5 33.94	10.63	
	40	Rumker, 568	C.	43.13	44.08	44.94	45.98	46.80	8 44.99	+ 0.03	54.27	2 7 50.75	8.42	
	†41	Arg. Z. N., 59.20	C.	55.91	58.47	1.06	3.00	4.74	14 0.64	— 0.18	54.27	2 13 6.19	12.04	
	42	Santini, 138	E.	46.86	47.77	50.42	51.29	52.12	18 49.69	— 45.31	54.28	2 17 10.10	8.21	
	43		B.	26.24	27.29	28.17	28.99	31.93						
	44	Weisse, 333	C.	49.20	49.99	50.87	51.91	52.71	21 51.02	+ 0.05	54.28	2 20 56.79	8.11	
	45		D.	10.53	13.03	13.91	14.85	15.71						
	46		B.	40.71	41.63	42.54	43.40	46.19						
	47	γ Ceti	C.	3.46	4.43	5.21	6.06	6.86	37 5.25	+ 0.06	—54.30	2 36 11.01	— 8.09	
	48		D.	24.32	27.16	28.15	28.97	29.70						

17. Very tremulous.
35. Observed in the same field with the two preceding.
39. Several other stars in the field.
41. Perhaps 1*m.* too small.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
Dec. 11, 1.1	— 54.21	— 0.057	+ 0.137	— 0.095	— 0.073

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s	m. s.	s.	h. m. s.	s.	
	1		C.	39.09	39.93	40.86	41.81	42.81						
Dec. 11	2	δ Arietis	D.	1.28	4.00	5.16	6.09	6.90	5 4.64	— 23.72	—54.32	3 3 46.60	— 8.96	N.
	3		E.	25.20	26.34	29.13	30.06	30.95						
	4		B	55.84	56.86	57.94	58.91	2.08						
12	5	Sun's 1st Limb	C.	20.92	21.84	22.74	23.76	24.59	19 22.80	+ 0.10	54.50	17 18 28.40	- -	
	6		D.	43.75	46.73	47.75	48.66	49.57						
	7		B	18.12	18.97	19.92	20.99	24.26						
	8	Sun's 2d Limb	C.	42.88	43.74	44.67	45.57	46.47	21 44.87	0.10	54.50	17 20 50.47	- -	
	9		D.	6.08	8.95	9.95	10.86	11.69						
	10		B.	3.72	4.52	5.45	6.23	9.27						
	†11	Venus, 1st Limb	C.	28.00	29.07	30.02	30.78	31.56	45 29.96	0.09	54.55	20 44 36.37	- -	
	12		D.	50.63	53.58	54.57	55.63	56.44						
	13		B	46.17	47.02	48.13	48.97	51.61						
	14	η Aquarii	C.	9.02	9.99	10.88	11.77	12.64	29 10.83	0.06	- -	- - - -	- -	
	15		D.	29.92	32.87	33.69	34.48	35.26						
	16		B.	4.80	5.77	6.57	7.45	10.14						
	17	ζ Pegasi	C.	27.99	28.85	29.68	30.52	31.41	35 29.72	0.05	- -	- - - -	- -	
	18		D.	49.30	52.02	52.90	53.82	54.61						
	19		B.	27.76	28.86	29.96	31.02	34.12						
	20	α Piscis Australis	C.	54.22	55.41	56.47	57.37	58.38	50 56.35	+ 0.11	- -	- - - -	- -	
	21		D.	18.62	21.92	22.78	23.79	24.63						
	22	σ Cassiopeæ	C.	53.87	55.51	56.87	58.80	0.08	52 57.03	— 0.13	54.63	23 52 2.27	7.05	
	23		B.	25.43	26.31	27.18	28.03	30.70						
	24	Neptune	C.	48.06	49.19	49.95	50.76	51.62	58 49.92	+ 0.07	54.58	23 57 55.41	- -	
	25		D.	9.10	11.77	12.72	13.58	14.41						
	†26	Polaris	B.	36.00	12.00	49.00	27.00	14.00	2 36.42	- -	- -	- - - -	- -	Y.
	†27		C.	58.00	35.00	- -	45.00	19.00						
	28		B.	19.08	19.92	20.93	21.74	24.83						
	†29	ρ Piscium	C.	42.95	43.95	44.87	45.96	46.91	19 44.95	0.06	54.40	1 18 50.61	8.00	
	30		D.	5.27	8.30	9.21	10.00	10.87						
	31		B.	46.40	47.24	48.13	49.07	51.75						
	32	ν Piscium	C.	9.07	9.96	10.91	11.85	12.72	35 10.98	0.08	54.40	1 34 16.67	7.81	
	33		D.	30.21	33.01	33.90	34.83	35.66						
	34		A.	6.65	7.60	8.57	11.75	12.77						
	35		B.	31.22	32.13	33.20	34.16	36.85						
	†36	β Arietis	C.	55.46	56.28	57.22	58.20	59.13	47 57.33	0.09	54.39	1 47 3.03	8.33	
	37		D.	17.85	20.92	21.78	22.68	23.52						
	38		E.	41.93	43.05	45.86	46.80	47.66						
	39		A.	28.83	29.72	30.62	33.76	34.63						
	40		B.	53.60	54.43	55.38	56.31	59.38						
	41	α Arietis	C.	18.38	19.26	20.10	20.92	21.96	0 20.13	0.08	54.38	1 59 25.83	8.56	
	42		D.	40.91	43.90	44.81	45.78	46.76						
	43		E.	5.60	6.71	9.60	10.53	11.51						
	44		B	2.11	3.03	3.87	4.67	7.81						
	†45	Moon's 1st Limb	C.	26.26	27.13	28.10	29.15	29.93	2 28.17	0.06	54.38	2 1 33.85	- -	
	46		D.	48.76	51.67	52.47	53.32	54.21						
	47		A.	10.28	11.31	12.38	15.11	16.17						
	48		B.	34.88	35.67	36.60	37.53	40.53						
	49	η Arietis	C.	59.20	0.17	0.96	1.92	2.83	6 0.99	0.08	54.38	2 5 6.69	8.52	
	50		D.	21.50	24.51	25.38	26.16	27.31						
	51		E.	45.83	46.85	49.66	50.53	51.47						
	52		B.	37.32	38.21	39.11	39.97	42.78						
	53	67 Ceti	C.	0.23	1.20	2.05	2.97	3.86	11 2.10	+ 0.10	—54.38	2 10 7.83	— 7.70	
	54		D.	21.40	24.21	25.27	26.07	26.91						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m.	n.	c.
h.	s.	s.	s.	s.	s.
Dec. 12, 20.7	— 54.55	— 0.015	- -	- -	- -
12, 2.0	— 54.38	+ 0.033	+ 0.164	— 0.090	— 0.073

11. Very tremulous, and undulating. Correction for semi-diameter, $+0^{s}.87$.
26–27 and 29, 36. Unsteady.
45. Very unsteady.
Azimuth cor., December 12, from Polaris and ν Piscium.

Dec. 12. 2*h*. 25*m*. Image west $0^{r}.12$. Clamp west.

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
	1		A.	57.73	58.71	59.60	2.33	3.23						
	2		B.	20.76	21.63	22.53	23.31	26.22						
Dec. 12	3	ξ^2 Ceti	C.	43.63	44.52	45.45	46.30	47.30	21 45.52	+ 0.11	—54.37	2 20 51.26	— 8.18	Y.
	4		D.	4.76	7.70	8.71	9.52	10.38						
	5		E.	27.85	28.81	31.51	32.37	33.21						
	6		B.	24.00	24.85	25.93	26.87	30.10						
	†7	α Scorpii	C.	49.28	50.47	51.31	52.11	52.98	21 51.28	+ 0.10	- -	- - - -	- -	N.
	8		D.	12.63	15.63	16.65	17.66	18.75						
	9		C.	45.96	46.90	47.87	48.78	49.78						
13	10	Sun's 1st Limb	D.	8.21	11.62	12.62	13.44	14.21	24 12.13	— 24.36	54.62	17 22 53.15	- -	
	11		E.	33.46	34.42	37.44	38.22	39.05						
	12		B.	43.00	43.93	44.97	45.96	48.83						
	13	Sun's 2d Limb	C.	7.84	8.81	9.78	10.71	11.58	26 9.81	+ 0.10	54.62	17 25 15.29	- -	
	14		D.	30.72	33.83	34.76	35.70	36.73						
	15		C.	54.99	56.08	56.97	57.94	58.72						
	16	α Aquilæ	D.	16.30	19.14	20.08	20.87	21.74	45 19.58	— 22.61	54.53	19 44 2.44	5.54	
	17		E.	39.33	40.27	42.91	43.76	44.63						
	18		B.	15.83	16.74	17.71	18.66	21.61						
	†19	Venus, 1st Limb	C.	39.88	40.96	41.90	42.84	43.79	49 42.00	+ 0.09	54.49	20 48 48.48	- -	
	20		D.	2.39	5.39	6.53	7.44	8.37						
	21		B.	46.09	46.99	47.81	48.68	51.50						
	22	η Aquarii	C.	8.74	9.77	10.67	11.49	12.28	29 10.61	0.06	54.44	22 28 16.23	6.68	
	23		D.	29.84	32.47	33.46	34.29	35.09						
	24		B.	27.81	28.92	29.79	30.81	33.96						
	25	α Piscis Australis	C.	53.90	55.08	55.97	57.07	58.23	50 56.14	+ 0.11	54.42	22 50 1.83	7.34	
	26		D.	18.45	21.51	22.60	23.56	24.46						
	27	π Cephei	C.	18.63	22.25	25.28	28.53	31.73	4 25.28	— 0.64	54.41	23 3 30.23	3.60	
	28	B. A. C., 8154[1]	B.	6.08	7.08	7.96	8.81	11.57	17 31.01	+ 0.08	54.41	23 16 36.68	7.16	
	29		D.	50.27	53.21	54.20	55.08	55.87						
	30	B. A. C., 8154[2]	C.	29.55	30.66	31.69	32.51	33.36	17 31.55	0.08	54.41	23 16 37.22	7.16	
	31		B.	2.41	3.28	4.17	4.98	7.91						
	32	Weisse, 528	C.	25.82	26.83	27.74	28.67	29.46	28 27.73	+ 0.03	54.40	23 27 33.36	6.86	
	33		D.	47.71	50.41	51.34	52.23	53.07						
	34	Weisse, 539	D	11.98	14.86	15.77	16.61	17.48	29 15.34	— 23.20	54.40	23 27 57.74	6.87	
	35	Weisse, 679	C.	22.59	23.51	24.43	25.32	26.10	34 24.39	+ 0.05	54.40	23 33 30.04	6.98	
	36	Weisse, 683	B.	7.86	8.75	9.67	10.63	13.26	34 32.66	0.05	54.40	23 33 38.31	6.99	
	37		D.	51.92	54.86	55.74	56.56	57.34						
	38	Weisse, 685	C	33.90	34.87	35.71	36.59	37.51	34 35.72	0.05	54.40	23 33 41.37	6.98	
	39		B.	9.12	9.97	10.84	11.62	14.37						
	40	Weisse, 916	C.	31.94	32.83	33.74	34.59	35.37	46 33.70	0.07	54.39	23 45 39.38	7.10	
	41		D.	52.81	55.73	56.71	57.53	58.37						
	42		B.	25.66	26.44	27.31	28.13	30.88						
	43	Neptune	C.	48.43	49.21	50.08	50.97	51.80	58 50.12	0.07	54.39	23 57 55.80	- -	
	44		D.	9.30	12.11	12.97	13.87	14.68						
	45		B.	43.07	44.03	45.11	46.10	49.23						
	46	α Andromedæ	C.	8.97	9.92	10.85	11.93	12.92	2 10.95	0.00	54.39	0 1 16.56	7.24	
	47		D.	32.74	35.91	36.83	37.85	38.83						
	48	Weisse, 59	C.	6.87	7.75	8.77	9.66	10.52	5 8.71	0.05	54.39	0 4 14.37	7.21	
	49	Weisse, 69	C.	36.28	37.16	38.04	38.85	39.74	5 38.01	0.05	54.39	0 4 43.67	7.22	
	50		B.	32.14	33.13	34.13	35.11	37.81						
	51	B. A. C., 137	C.	55.41	56.25	57.27	58.10	58.90	27 57.21	+ 0.05	—54.37	0 27 2.89	— 7.42	
	52		D.	16.75	19.57	20.34	21.21	22.08						

7. Very faint.
19. Correction for semi-diameter, +0.88 s.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m.	n.	c.
h.	s.	s.	s.	s.	s.
Dec. 13, 22.7	— 54.43	+ 0.034	+ 0.137	— 0.095	— 0.073

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m s.	s.	h. m. s.	s.	
	1		B.	34.50	10.50	48.00	26.00	13.00						
	2		C.	- -	32.00	7.00	45.00	17.00						
Dec. 13	3	Polaris - - - - -	D.	6.50	52.00	31.00	5.50	41.00	17 45.37	—7 44.73	—54.34	1 9 6.30	— 64.81	N.
	4		E.	24.50	2.00	50.00	22.50	0.50						
	5		B.	57.06	58.87	0.60	2.42	7.72						
	6	δ Cassiopeæ - - - -	C.	41.97	43.88	45.58	47.37	48.81	17 45.60	— 0.16	54.34	1 16 51.10	9.95	
	7		D	23.62	28.93	30.61	32.37	34.16						
	8		B.	56.08	57.03	57.90	58.77	1.49						
	9	ξ Piscium - - - -	C.	18.91	19.77	20.68	21.58	22.42	47 20.71	+ 0.06	54.33	1 46 26.44	7.82	
	10		D.	39.89	42.71	43.63	44.48	45.31						
	11		B.	8.12	9.09	10.06	10.81	13.62						
	†12	Anon. (10.11,) +15° 28′	C.	31.47	32.38	33.35	34.27	35.23	53 33.48	0.03	54.32	1 52 39.19	8.22	
	13		D.	53.25	56.11	57.13	58.22	59.17						
	14		B.	53.50	54.39	55.50	56.49	59.36						
	15	α Arietis - - - - -	C.	18.21	19.18	20.14	21.11	22.09	0 20.16	0.02	54.32	1 59 25.86	8.57	
	16		D.	40.97	43.97	44.96	45.85	46.71						
	17		B.	34.63	35.71	36.71	37.56	40.51						
	18	η Arietis - - - -	C.	58.97	0.04	0.98	1.94	2.85	6 1.00	0.02	54.32	2 5 6.70	8.52	
	19		D.	21.53	24.53	25.46	26.36	27.16						
	20		A.	17.86	19.17	20.24	22.87	23.98						
	21		B.	43.02	44.01	44.97	45.87	48.87						
	†22	Moon's 1st Limb - -	C	7.63	8.80	9.63	10.66	11.44	52 9.70	0.05	54.29	2 51 15.46	- -	
	23		D	30.54	33.50	34.57	35.49	36.31						
	24		E.	55.57	56.46	59.29	0.45	1.20						
	25		B.	.76	.86	.68	.69	.34						
	†26	δ Arietis - - - - -	C.	.00	.87	.80	.74	.71	3 .90	+ 0.03	54.28	.65	8.96	
	27		D.	.46	.30	.22	.09	.95						
	28		C.	10.98	11.98	12.87	13.81	14.90						
14	†29	Sun's 1st Limb - -	D.	33.82	36.97	37.97	38.93	39.75	28 37.40	— 24.36	54.18	17 27 18.47	- -	
	30		E.	58.71	59.65	2.47	3.64	4.63						
	31		B.	8.11	9.17	10.29	11.07	14.19						
	†32	Sun's 2d Limb - -	C.	33.22	34.11	35.01	35.96	36.84	30 35.03	+ 0.10	54.18	18 29 40.95	- -	
	33		D.	55.92	58.91	59.88	0.90	1.87						
	34		C.	6.82	7.94	8.87	10.05	11.24						
	35	α Lyræ - - - - -	D.	33.51	37.11	38.26	39.34	40.36	33 37.67	— 28.72	54.20	18 32 14.75	- -	
	36		E.	2.71	3.87	7.21	8.32	9.43						
	37		B.	4.46	5.34	6.34	7.20	9.84						
	38	ζ Pegasi - - - - -	C.	27.71	28.47	29.41	30.30	31.16	35 29.42	+ 0.05	54.20	22 34 35.17	- -	
	39		D.	48.90	51.70	52.57	53.52	54.40						
	40		A.	12.85	13.85	14.71	17.56	18.49						
	41		B.	35.88	36.91	37.76	38.62	41.43						
	42	Weisse, 1*h.* —89 - -	C.	58.88	59.74	0.70	1.63	2.47	7 0.54	0.01	54.05	1 6 6.50	7.56	Y.
	43		D.	19.77	22.38	23.48	24.38	25.21						
	44		E.	42.48	43.46	46.09	46.99	47.87						
	45		B.	37.00	12.00	47.00	23.00	12.00						
	46	Polaris - - - - -	D.	1.00	50.00	30.00	5.00	41.00	10 7.80	+ 0.04	- -	- - - - -	- -	
	47		B.	15.90	16.73	17.79	18.55	21.21						
	48	42 Ceti - - - - -	C.	38.78	39.67	40.51	41.41	42.27	13 40.49	— 0.02	54.05	1 12 46.42	7.56	
	49		D.	59.61	2.37	3.33	4.17	5.08						
	50		B.	38.03	39.00	39.95	40.87	43.71						
	51	θ¹ Ceti - - - - -	C.	1.19	2.21	3.04	3.92	4.78	18 3.05	0.01	54.05	1 17 8.99	7.44	
	52		D.	22.53	25.32	26.22	27.13	27.86						
	53		B.	19.85	20.85	21.68	22.70	25.35						
	54	Lalande, 3237 - - -	C.	42.77	43.76	44.59	45.50	46.21	39 44.58	— 0.02	—54.04	1 38 50.52	— 7.66	
	55		D.	3.79	6.66	7.48	8.36	9.17						

12. Last three wires of D very uncertain.
22. Blurred.
26. Seconds not recorded.
29. Steady.
32. Quite steady. *r.*
Dec. 13. 2*h.* 30*m.* Image west 0.08. Clamp west.
Azimuth cor., Dec. 14, from Polaris and θ¹ Ceti.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s	s.	s.	s.
Dec. 14, 2.9	— 54.00	+ 0.029	+ 0.049	— 0.099	— 0.073

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
	1		B.	7.93	8.83	9.80	10.59	13.36						
Dec. 14	2	Weisse, 773	C.	30.73	31.66	32.67	33.42	34.34	44 32.59	— 0.02	—54.03	1 43 38.53	— 7.68	Y.
	3		D.	51.80	54.57	55.54	56.43	57.17						
	4		C.	18.58	19.61	20.42	21.40	22.18						
	5	ξ Piscium	D.	39.53	42.46	43.32	44.17	44.91	47 42.83	— 22.46	54.03	1 46 26.34	— 7.81	
	6		E.	2.37	3.28	5.82	6.78	7.66						
	7		B.	21.00	6.50	51.50	36.50	52.00						
	8	Groombridge, 2099, S. P.	C.	17.00	1.00	48.00	32.00	18.00	4 47.07	+ 2.77	54.02	14 3 55.81	+ 30.96	
	9		D.	41.00	57.00	41.00	28.50	15.00						
	10		B.	20.41	21.27	22.26	23.11	25.88						
	11	ξ^2 Ceti	C.	43.52	44.42	45.30	46.14	46.98	21 45.29	— 0.04	54.02	2 20 51.24	— 8.17	
	12		D.	4.75	7.46	8.47	9.32	10.11						
	13		B.	28.05	29.08	29.91	30.84	33.51						
	14	Weisse, 455	C.	51.08	51.98	52.85	53.80	54.67	28 52.82	0.03	54.01	2 27 58.78	7.97	
	15		D.	12.08	14.76	15.71	16.57	17.47						
	16		B	40.27	41.11	42.07	42.85	45.65						
	17	Weisse, 585	C.	2.97	3.93	4.77	5.67	6.52	35 4.78	0.03	54.01	2 34 10.74	8.11	
	18		D.	23.97	26.87	27.75	28.58	29.38						
	19		B.	49.31	50.22	51.26	52.33	55.19						
	20	ε Arietis	C	13.57	14.62	15.62	16.57	17.57	52 15.64	0.07	54.00	2 51 21.58	8.90	
	21		D.	36.08	39.08	40.22	41.06	41.97						
	22		B.	14.71	15.61	16.60	17.43	20.37						
	23	δ Arietis	C.	38.77	39.71	40.68	41.67	42.57	4 40.70	0.06	54.00	3 3 46.64	8.94	
	24		D.	1.00	3.89	4.91	5.84	6.71						
	25		B.	46.50	0.00	14.00	28.00	7.50						
	26	B. A. C., 1061	D.	57.50	30.00	44.00	56.00	9.00	22 59.75	— 2.52	53.99	3 22 3.24	— 59.53	
	27	B. A. C., 5140, S. P.	C.	15.00	51.00	29.00	4.00	41.00	23 28.00	+ 4.49	53.99	15 22 38.50	+ 82.39	
	28		B	10.54	11.49	12.52	13.56	16.37						
	29	17 Tauri	C.	35.55	36.57	37.54	38.41	39.39	37 37.45	— 0.07	53.98	3 36 43.40	— 9.39	
	30		D.	58.43	1.38	2.37	3.40	4.29						
	31		B.	46.65	47.68	48.63	49.67	52.60						
	32	η Tauri	C.	11.53	12.57	13.50	14.44	15.47	40 13.49	0.07	53.98	3 39 19.44	9.41	
	33		D.	34.35	37.30	38.36	39.37	40.29						
	34		A.	7.83	8.93	9.94	13.07	14.09						
	35		B.	33.38	34.33	35.25	36.20	39.44						
	36	Moon's 1st Limb	C.	58.49	59.53	0.53	1.46	2.47	44 0.53	0.04	53.98	3 43 6.52	- -	
	37		D.	21.83	24.95	25.87	26.91	27.77						
	38		E.	47.17	48.08	51.08	51.93	52.86						
	39		B.	6.25	7.30	8.21	9.06	11.81						
	40	γ^1 Eridani	C.	29.66	30.71	31.56	32.56	33.41	52 31.56	0.02	53.97	3 51 37.59	7.65	
	41		D.	51.20	54.06	54.94	55.94	56.81						
	42		B.	2.34	3.27	4.27	5.21	8.16						
	43	A^1 Tauri	C	26.77	27.85	28.77	29.69	30.68	57 28.77	0.07	53.97	3 56 34.74	9.40	
	44		D.	49.55	52.39	53.29	54.25	55.13						
	45		B.	39.12	40.08	41.09	41.98	44.57						
	46	o^1 Eridani	C.	2.13	3.12	3.92	4.85	5.71	6 3.95	— 0.01	53.97	4 5 9.97	— 7.95	
	47		D.	23.21	25.98	26.97	27.85	28.75						
	48		B.	3.86	4.65	5.68	6.54	9.36						
15	†49	ε Tauri	C.	27.82	28.90	29.86	30.71	31.57	21 29.72	+ 0.08	53.63	- - - -	- -	N.
	50		D.	49.81	52.91	53.77	54.80	55.57						
	51		B.	30.48	31.63	32.59	33.39	36.42						
	†52	α Tauri	C.	54.11	54.97	55.77	56.81	58.10	28 56.17	+ 0.08	—53.63	- - - -	- -	
	53		D.	16.31	19.08	20.11	21.06	21.77						

49. Blurred.
52. Excessively blurred.

Dec. 14. 4*h*. 10*m*. Image $\overset{r.}{0.00}$. Clamp west.
Dec. 15. Azimuth assumed from the observations of the days preceding and following.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
Dec. 14, 2.9	— 54.00	+ 0.029	+ 0.049	— 0.099	— 0.073
15, 4.5	— 53.63	0.000	+ 0.130	+ 0.011	— 0.073

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s	m. s.	s.	h. m. s.	s.	
	1		A.	52.32	53.24	54.23	57.32	58.31						
	2		B.	17.93	19.17	20.11	20.99	23.88						
Dec. 15	†3	Moon's 1st Limb	C.	43.43	44.71	45.65	46.55	47.50	37 45.55	+ 0.11	—53.63	4 36 52.03	- -	N.
	4		D.	7.17	10.27	11.37	12.31	13 19						
	5		E.	32.77	33.81	36.52	37.46	38.49						
	6		C.	54.75	55.94	56.83	57.87	58.98						
	7	ι Aurigæ	D.	19.71	23.00	23.96	25.03	26.03	49 23.54	— 26.60	53.63	- - - -	- -	
	8		E.	46.87	47.83	51.22	52.06	52.99						
	9		B	20.67	21.59	22.73	23.53	26.45						
	10	ι Tauri	C.	45.10	46.13	46.97	47.88	48.74	55 47.09	+ 0.08	53.63	4 54 53.54	- -	
	11		D.	7.83	10.83	11.79	12.64	13.44						
	12		B.	23.07	23.97	24.97	25.96	28.93						
	13	α Scorpii	C	48.62	49.46	50.41	51.31	52.51	21 50.41	0.01	53.73	- - - -	- -	
	14		D.	11.64	14.85	15.89	16.77	17.77						
	15		B.	11.97	12.89	13.81	14.67	17.59						
	16	Mercury, Centre	C.	36.32	37.41	38.41	39.31	40.21	35 38.37	0.02	53.73	16 34 44.66	- -	
	17		D.	59.08	2.09	3.06	3.97	4.82						
	18		B.	35.77	36.57	37.67	38.62	41.34						
16	†19	Venus, 1st Limb	C.	59.88	0.85	1.68	2.67	3.52	2 1.75	0.03	53.66	21 1 9.03	- -	
	20		D.	22.21	24.97	25.91	26.87	27.80						
	21		B.	28.72	29.72	30.77	31.70	35.03						
	22	ζ Cygni	C.	54.85	55.90	56.90	57.98	58.94	7 56.97	0.08	53.66	21 7 3.39	— 4.87	
	23		D.	19.08	22.30	23.27	24.19	25.19						
	24		B.	26.95	27.89	29.03	30.11	33.26						
	25	α Piscis Australis	C.	53.38	54.49	55.48	56.41	57.37	50 55.44	0.00	53.63	22 50 1.81	7.29	
	26		D.	17.76	20.84	21.87	22.91	23.93						
	27	Anon. (8) +66° 33′	B.	38.04	40.65	42.81	45.17	51.86	0 11.79	28.33	53.63	22 59 46.49	4.55	
	28		C.	35.23	38.09	40.05	41.98	44.07						
	29		B.	8.48	9.52	10.36	11.11	13.89						
	30	Weisse, 916	C.	31.17	32.08	33.07	33.92	34.72	46 33.09	0.05	53.61	23 45 39.53	7.08	
	31		D.	52.37	55.08	56.00	56.92	57.71						
	32		B.	26.65	27.61	28.46	29.27	31.91						
	33	Neptune	C.	49.42	50.36	51.21	52.01	52.83	58 51.21	0.05	53.61	23 57 57.65	- -	
	34		D.	10.41	13.21	14.09	14.96	15.78						
	35		B.	42.17	43.14	44.19	45.18	48.29						
	36	α Andromedæ	C.	7.95	8.93	9.98	11.03	12.08	2 10.05	0.09	53.61	0 1 16.53	7.19	
	37		D.	31.92	34.97	36.09	36.98	37.89						
	38	Radcliffe, 79	C.	5.87	7.14	8.07	8.97	10.18	16 8.05	0.11	53.61	0 15 14.55	7.52	
	39		B.	.79	.77	.57	.62	.67						
	40	Lacaille, 142	C.	.68	.59	.51	.53	.44	.57	0.02	53.60	.99	7.19	
	41		D.	.52	.57	.57	.37	.37						
	42	Polaris	B.	25.50	0.00	39.00	15.00	5.00	54 52.90	15 6.22	53.60	1 9 5.52	- -	
	†43	Lacaille, 319	C.	18.97	19.99	21.04	21.87	22.72	4 20.92	0.01	53.59	1 3 27.34	7.17	
	44		B.	7.89	8.85	9.72	10.61	13.47						
	45	Weisse, 100	C.	30.96	31.96	32.84	33.68	34.47	8 32.78	0.07	53.59	1 7 39.26	7.69	
	46		D.	52.23	54.96	55.84	56.66	57.51						
	47		B.	3.77	4.71	5.57	6.46	9.28						
	48	Weisse, 113	C.	26.94	27.81	28.81	29.69	30.51	9 28.70	0.07	53.59	1 8 35.18	7.70	
	49		D.	47.97	50.89	51.82	52.74	53.51						
	50		B.	44.08	44.96	45.79	46.56	49.24						
	51	Weisse, 197	C	6.84	7.74	8.52	9.39	10.19	14 8.56	+ 0.06	—53.59	1 13 15.03	— 7.60	
	52		D.	27.77	30.53	31.39	32.29	33.06						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m.	n.	c.
h.	s.	s.	s.	s.	s
Dec. 15, 4.5	— 53.63	0.000	+ 0.130	+ 0.011	— 0.073
16, 0.7	— 53.60	+ 0.015	+ 0.130	+ 0.084	— 0.073

3. Much blurred.

19. Correction for semi-diameter, +0.91 s.
43. Through clouds.
Azimuth from Polaris.

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
	1		B.	18.98	19.99	20.87	21.69	24.87						
Dec. 16	2	* (9) +13° 46′ - -	C	42.76	43.57	44.41	45.31	46.15	33 44.38	+ 0.08	—53.59	1 32 50.87	— 7.99	N.
	3		D.	4.11	6.67	7.91	8.77	9.67						
	4		B.	28.31	29.20	30.03	30.83	33.76						
	5	* (9.10) +13° 49′ -	C	51.51	52.28	53.18	54.03	54.87	33 53.32	0.08	53.59	1 32 59.81	7.99	
	6		D.	12.79	15.81	16.82	17.71	18.65						
	7	* (8.9) +13° 47′ - -	C.	27.70	28.49	29.33	30.11	30.87	43 29.30	0.08	53.58	1 42 35.80	8.07	
	8		B.	10.55	11.50	12.39	13.22	16.25						
	9	Lalande, 3344 - - -	C.	34.16	34.99	35.89	36.70	37.62	43 35.87	0.08	53.58	1 42 42.37	8.07	
	10		D.	55.60	58.43	59.37	0.25	1.09						
	11		B.	52.66	53.63	54.67	55.61	58.46						
	12	α Arietis - - - - -	C.	17.21	18.26	19.28	20.21	21.25	0 19.27	0.09	53.58	1 59 25.78	8.54	
	13		D.	40.02	43.06	44.03	44.92	45.82						
	14		B.	35.81	36.97	38.51	39.95	44.51						
	15	Radcliffe, 637 - - -	C.	12.98	14.36	15.79	17.27	18.84	5 15.87	0.12	53.58	2 4 22.41	10.38	
	16		D.	47.44	51.81	53.22	54.77	55.81						
	17		B.	54.16	55.86	57.09	58.53	2.99						
	18	A. Z. N., 55.49 - -	C.	31.83	33.18	34.19	35.94	37.17	5 34.57	+ 0.12	53.58	2 4 41.11	— 10.39	
	19		D.	6.15	10.65	12.01	13.81	14.94						
	†20		B.	30.82	27.90	24.37	20.80	10.59						
	†21	β Ursæ Minoris, S. P. -	C.	4.39	1.12	57.87	55.00	51.69	52 40.45	— 42.35	53.57	14 5 4.53	+ 4.32	
	22		B.	14.08	15.17	16.08	16.98	19.77						
	23	δ Arietis - - - - -	C.	38.21	39.27	40.21	41.07	42.05	4.40.16	+ 0.09	53.57	3 3 46.68	— 8.95	
	24		D.	0.52	3.37	4.35	5.27	6.07						
	25	ι Tauri - - - - -	E.	31.99	32.97	35.83	36.63	37.66	56 35.02	— 48.01	53.54	4 54 53.47	9.64	
	26		B.	6.17	7.31	8.15	9.25	12.07						
	27	ε Leporis - - - - -	C.	30.93	31.93	33.00	33.88	34.74	0 32.89	+ 0.02	53.54	4 59 39.37	7.27	
	28		D.	53.71	56.52	57.61	58.56	59.51						
	29		B.	51.27	52.44	53.83	55.17	58.91						
	30	α Aurigæ - - - - -	C.	23.99	25.42	26.49	27.54	28.91	7 26.90	— 0.25	53.54	5 6 33.11	12.08	
	31		D.	- -	58.10	59.42	0.34	1.82						
	32	θ^1 Orionis - - - - -	C.	23.70	24.73	25.67	26.61	27.32	29 25.61	+ 0.05	53.53	5 28 32.13	8.12	
	33	θ^2 Orionis - - - - -	C.	30.12	31.05	32.08	32.95	33.77	29 31.99	0.05	53.53	5 28 38.51	8.12	
	34		A.	49.99	50.99	51.79	54.88	56.10						
	35		B.	15.63	16.57	17.69	18.58	21.71						
	†36	Moon's 1st Limb - -	C.	41.20	42.08	43.15	44.21	45.21	32 43.17	0.11	53.53	5 31 49.75	- -	
	37		D.	4.81	7.82	8.76	9.80	10.80						
	38		E.	30.40	31.36	34.36	35.30	36.16						
	39		B.	31.63	32.72	33.67	34.51	37.83						
	†40	Moon's 2d Limb - -	C.	57.36	58.24	59.25	0.23	1.11	34 59.23	0.08	53.53	5 34 5.78	- -	
	41		D.	20.72	23.86	24.87	25.82	26.67						
	42		B.	36.57	37.62	38.62	39.53	42.51						
	43	B. A. C., 1867 - - -	C.	0.93	1.97	2.83	3.72	4.59	46 2.83	+ 0.08	53.53	5 45 9.38	9.65	
	44		D.	23.31	26.20	27.17	28.03	28.86						
	45		D.	28.99	31.97	32.92	33.82	34.69						
	46	χ^1 Orionis - - - - -	E.	53.22	54.23	57.09	58.10	58.87	47 44.39	— 35.74	53.53	5 46 15.12	9.60	
	47		C.	35.49	36.56	37.47	38.37	39.19						
	†48	ν Orionis - - - - -	D	57.34	0.13	0.99	1.88	2.72	1 0.58	— 23.09	53.52	5 59 43.97	9.18	
	49		E.	20.89	21.74	24.53	25.34	26.12						
	50		B.	2.23	3.16	4.12	5.12	8.02						
	†51	η Geminorum - - -	C.	26.92	27.88	28.81	29.72	30.79	7 28.83	+ 0.09	—53.52	6 6 35.40	— 9.78	
	52		D.	49.63	52.51	53.68	54.47	55.35						

20–21. Badly blurred.
36. Unsteady and somewhat flaring.
40. Somewhat jagged.
48. Sets D. and E. best.
51. Fine observation.

Dec. 16. 5*h*. 40*m*. Image west *r*. 0. 10. Clamp west.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m*.	*n*.	*c*.
h.	s	s.	s.	s.	s.
Dec. 16, 0.7	— 55.60	+ 0.015	+ 0.130	+ 0.084	— 0.073
13.0	— 53.32	+ 0.028	- -	- -	- -

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
Dec. 16	1	β Ursæ Minoris	D.	11.07	21.38	25.17	27.91	31.60	54 5.72	—2 7.38	—53.27	14 51 5.07	+ 4.28	N.
	2		E.	37.30	40.74	50.86	53.81	57.38						
17	3	Sun's 1st Limb	C.	27.40	28.36	29.25	30.35	31.16	41 41.62	— 12.25	53.19	17 40 36.18	- -	
	4		D.	50.37	53.43	54.43	55.33	56.12						
	5		B.	25.04	25.97	26.87	27.83	30.84						
	6	Sun's 2d Limb	C.	49.74	50.75	51.82	52.79	53.69	43 51.77	+ 0.00	—53.19	17 42 58.58	- -	
	7		D.	12.71	15.68	16.66	17.63	18.48						
	8		B.	36.31	37.60	38.68	39.97	43.49						
	9	α Lyræ	C.	5.71	6.85	7.97	9.11	10.11	34 7.96	— 0.11	- -	- - - -	- -	
	10		D.	32.52	36.12	37.23	38.23	39.44						
	11		B.	36.60	37.53	38.45	39.35	42.35						
	†12	Venus, 1st Limb	C.	0.69	1.69	2.66	3.55	4.46	6 2.60	0.01	53.13	21 5 10.37	- -	
	13		D.	22.90	25.81	26.73	27.66	28.55						
	14		B.	16.05	17.95	19.88	21.87	27.66						
	15	α Cephei	C.	4.72	6.81	8.46	10.31	12.15	16 8.49	0.25	- -	- - - -	- -	
	16		D.	49.59	55.17	57.21	58.87	0.72						
	17		B.	46.11	47.06	47.84	48.78	51.52						
	18	β Aquarii	C.	8.97	9.97	10.85	11.71	12.49	25 10.80	0.02	- -	- - - -	- -	
	19		D.	30.10	32.96	33.78	34.57	35.32						
	20		C.	6.06	7.09	8.02	8.87	9.81						
	21	ε Orionis	D.	27.16	29.93	30.92	31.75	32.57	30 30.41	22.44	52.98	5 29 14.99	— 8.36	Y.
	22		E.	49.86	50.81	53.50	54.46	55.29						
	23		B.	2.40	3.35	4.17	5.03	7.87						
	24	✡ (8) —13° 35′	C.	25.75	26.64	27.58	28.46	29.22	42 27.61	0.01	52.98	5 41 34.62	7.73	
	25		D.	47.31	50.21	51.23	52.09	52.91						
	26		B.	42.15	43.05	43.96	44.81	47.83						
	27	χ^1 Orionis	C.	6.27	7.27	8.17	9.13	9.99	47 8.22	0.06	52.98	5 46 15.18	9.60	
	28		D.	28.67	31.53	32.56	33.50	34.41						
	29	✡ (8) +19° 44′	E.	59.20	0.34	2.90	3.97	4.98	52 2.28	47.64	52.98	5 50 21.65	9.61	
	30		B.	11.56	12.53	13.42	14.34	17.17						
	31	ν Orionis	C.	35.16	36.10	36.92	37.95	38.76	0 37.00	0.05	52.98	5 59 43.98	9.29	
	32		D.	56.90	59.72	0.67	1.49	2.38						
	33		C.	26.42	27.46	28.46	29.32	30.30						
	34	η Geminorum	D.	49.17	52.14	53.13	54.09	54.93	7 52.65	24.33	52.98	6 6 35.34	— 9.80	
	35		E	13.83	14.77	17.58	18.58	19.51						
	36	δ Ursæ Minoris, S. P.	C.	8.00	53.50	37.50	22.00	36.00	20 22.60	3 6.67	52.98	18 16 22.96	+ 67.34	
	37		D.	44.00	28.00	14.50	57.50	45.00						
	38		B.	43.13	44.09	45.09	46.07	49.08						
	†39	Moon's 2d Limb	C.	8.43	9.39	10.29	11.38	12.40	30 10.41	0.07	52.98	6 29 17.37	- -	
	40		D.	31.76	34.81	35.82	36.79	37.69						
	41	51 (Hev.) Cephei	E.	45.50	6.00	59.50	18.50	37.00	51 45.30	15 35.87	52.98	6 35 16.45	— 98.06	
	42		B.	54.82	55.88	56.96	57.91	0.79						
	43	ε Geminorum	C.	20.04	21.09	21.99	22.98	23.90	36 22.05	0.07	52.98	6 35 29.00	9.97	
	44		D.	43.22	46.26	47.31	48.32	49.29						
	45		C.	48.85	49.80	50.81	51.70	52.58						
	†46	ζ Geminorum	D.	11.31	14.31	15.29	16.12	17.09	57 14.76	24.02	52.97	6 55 57.76	9.59	
	47		E.	35.70	36.70	39.49	40.31	41.35						
	48		B.	21.69	22.66	23.61	24.59	27.49						
	49	δ Geminorum	C.	46.26	47.29	48.23	49.13	50.08	12 48.22	0.06	52.97	7 11 55.18	9.64	
	50		D.	8.97	11.89	12.86	13.79	14.80						
	51		C.	36.31	37.38	38.17	39.07	39.91						
	52	✡ (8. 9) —14° 26′	D.	57.81	0.71	1.69	2.67	3.64	16 1.31	— 23.14	—52.97	7 14 45.19	— 7.62	
	53		E.	21.41	22.41	25.32	26.18	27.00						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m.	n.	c.
h.	s.	s.	s.	s.	s.
Dec. 17, 6.5	— 52.98	+ 0.002	+ 0.045	— 0.077	— 0.073

12. Correction for semi-diameter, +0.91 s.
39. Steady.
46. Recorded 30″ less on the fillet.
Azimuth cor., Dec. 17, from δ Ursæ Minoris, S. P., and 51 (Hev.) Cephei.

Dec. 17. 7h. 30m. Image west 0.03 r. Clamp west.

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
Dec. 17	1	✲ (8. 9) +10° 24′ - -	B.	3. 78	4. 74	5. 66	6. 69	9. 41	20 17. 46	+ 11. 35	−52. 97	7 19 35. 84	— 8. 87	Y.
	2		C.	27. 10	28. 08	28. 86	29. 73	30. 57						
	3	✲ (8. 9) +10° 19′ - -	C.	39. 41	40. 48	41. 37	42. 21	43. 02	20 52. 72	— 11. 44	52. 97	7 19 48. 30	8. 87	
	4		D.	0. 78	3. 66	4. 51	5. 45	6. 28						
	5	α^1 Geminorum - - -	A.	46. 47	47. 62	48. 64	51. 97	52. 98	26 42. 56	0. 00	52. 97	7 25 49. 59	10. 31	
	6		E.	32. 25	33. 32	36. 45	37. 43	38. 46						
	7		B.	13. 91	15. 07	16. 12	17. 16	20. 45						
	8	α^2 Geminorum - - -	C.	40. 88	42. 07	43. 17	44. 16	45. 17	26 43. 12	0. 09	52. 97	7 25 50. 06	10. 31	
	9		D.	5. 87	9. 12	10. 25	11. 28	12. 17						
	10		B.	10. 73	- -	12. 89	13. 92	16. 98						
18	11	δ Sculptoris - - - -	C.	36. 90	37. 95	38. 86	39. 89	40. 79	42 39. 02	0. 14	54. 14	23 41 44. 74	7. 18	N.
	12		D.	0. 87	3. 95	4. 97	5. 99	6. 98						
	13	σ Cassiopeæ - - - -	E.	9. 32	10. 97	15. 73	17. 19	18. 68	54 14. 38	78. 15	54. 14	23 52 2. 09	6. 88	
	14		B.	29. 09	29. 91	30. 87	31. 67	34. 44						
	15	Neptune - - - -	C.	51. 92	52. 81	53. 57	54. 40	55. 26	58 53. 61	0. 01	54. 15	23 57 59. 45	- -	
	16		D.	12. 91	15. 51	16. 45	17. 26	18. 08						
	17		B.	3. 51	4. 91	6. 35	7. 49	11. 71						
	18	Groombridge, 64 - -	C.	38. 41	39. 67	40. 98	42. 51	43. 67	20 41. 12	0. 07	54. 15	0 19 46. 90	7. 61	
	19		D.	10. 64	14. 65	15. 97	17. 51	18. 79						
	20	Groombridge, 73 - -	C.	30. 91	32. 04	33. 10	34. 31	35. 56	24 33. 18	0. 05	54. 16	0 23 38. 97	7. 60	
	21	Groombridge, 89 - -	C.	15. 33	17. 95	19. 88	22. 36	24. 21	27 19. 95	0. 12	54. 16	0 26 25. 67	8. 33	
	22		B.	53. 55	55. 23	56. 81	58. 42	3. 22						
	23	α Cassiopeæ - - - -	C.	34. 30	35. 74	37. 32	38. 86	40. 17	33 37. 28	0. 08	54. 16	0 32 43. 04	8. 13	
	24		D.	11. 42	16. 17	17. 78	19. 36	20. 87						
	25	α^1 Cassiopeæ - - - -	C.	26. 89	28. 37	29. 92	31. 59	33. 17	33 29. 99	0. 08	54. 16	0 32 35. 75	8. 11	
	26		B.	9. 17	10. 00	10. 88	11. 85	14. 87						
	27	β Ceti - - - - -	C.	33. 08	34. 04	34. 99	35. 87	36. 66	37 34. 99	0. 01	54. 16	0 36 40. 82	7. 23	
	28		D.	55. 32	57. 99	59. 19	0. 06	0. 94						
	29	Groombridge, 148 - -	C.	6. 00	8. 95	11. 32	13. 93	16. 44	42 11. 33	0. 24	54. 16	0 41 16. 93	9. 42	
	30	Radcliffe, 317 - - -	C.	0. 27	1. 80	3. 26	4. 91	6. 61	57 3. 37	0. 08	54. 17	0 56 9. 12	8. 90	
	31	Groombridge, 227 - -	D.	36. 12	41. 17	43. 21	44. 49	46. 13	57 42. 22	41. 51	54. 17	0 56 6. 54	8. 90	
	32	Groombridge, 229 - -	D.	- -	50. 18	52. 08	53. 64	55. 10	57 52. 75	43. 10	54. 17	0 56 15. 48	8. 90	
	33	✲ (8. 9) +48° 2′ - -	C.	35. 07	36. 39	37. 61	39. 13	40. 55	6 37. 75	0. 07	54. 18	1 5 43. 50	8. 66	
	34	Polaris - - - - -	C.	49. 00	27. 50	1. 00	38. 00	14. 00	10 1. 90	3. 51	54. 17	1 9 4. 22	- -	
	35		C.	30. 66	31. 64	32. 48	33. 26	34. 14						
	36	Weisse, 1056 - - -	D.	51. 72	54. 41	55. 29	56. 20	56. 98	0 54. 88	22. 45	54. 19	1 59 38. 24	7. 90	
	37		E.	14. 46	15. 49	18. 00	18. 87	19. 67						
	38	Radcliffe, 637 - - -	C.	13. 57	15. 13	16. 76	18. 17	19. 64	5 16. 65	0. 07	54. 19	2 4 22. 39	10. 33	
	39	✲ (9. 10) +53° 58′ -	C.	16. 47	17. 77	19. 37	20. 88	22. 35	6 19. 37	0. 08	54. 19	2 5 25. 10	10. 49	
	40	A. Z. N., 154, 131 - -	C.	24. 81	26. 42	28. 04	29. 33	30. 97	6 27. 91	0. 08	54. 19	2 5 33. 64	10. 50	
	41		B.	37. 27	38. 18	39. 08	39. 86	42. 67						
	42	67 Ceti - - - - -	C.	0. 16	1. 10	1. 98	2. 95	3. 77	11 1. 97	0. 01	54. 19	2 10 7. 77	7. 77	
	43		D.	21. 33	23. 89	24. 81	25. 77	26. 70						
	44		B.	39. 31	40. 27	41. 27	42. 21	44. 93						
	45	B. A. C., 741 - - -	C.	2. 38	3. 26	4. 24	5. 21	5. 95	18 4. 27	0. 01	54. 19	2 17 10. 07	8. 15	
	46		D.	23. 69	26. 49	27. 47	28. 31	29. 11						
	47		B.	40. 53	41. 44	42. 36	43. 26	45. 97						
	48	γ Ceti - - - - -	C.	3. 38	4. 18	5. 07	6. 12	6. 97	37 5. 16	0. 01	54. 20	2 36 10. 95	8. 06	
	49		D.	24. 42	27. 09	28. 04	28. 94	29. 68						
	50		B.	6. 00	6. 92	7. 82	8. 71	11. 58						
	51	Rumker, 755 - - -	C.	29. 77	30. 48	31. 51	32. 41	33. 33	51 31. 50	— 0. 02	—54. 20	2 50 37. 28	— 8. 62	
	52		D.	51. 52	54. 26	55. 17	56. 11	56. 99						

Dec. 18. 3*h*. 30*m*. Image west *r*. 0. 09. Clamp west.
The azimuth from Polaris.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m*.	*n*.	*c*.
h.	s	s.	s.	s.	s.
Dec. 18, 4. 0	— 54. 23	— 0. 020	+ 0. 060	— 0. 014	— 0. 073

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
	1		B.	58.41	59.49	0.50	1.38	4.36						
Dec. 18	2	B. Z., 27.7	C.	23.21	24.05	24.83	25.86	26.91	56 25.07	— 0.03	—54.21	2 55 30.83	— 9.00	N.
	3		D.	46.03	48.81	49.75	50.68	51.73						
	4	☼ (9) —28° 52′	D.	47.57	50.16	51.31	52.51	53.52	5 3.81	38.41	54.21	3 3 31.19	7.00	
	5		E.	13.36	14.36	17.56	18.42	19.31						
	6		B.	5.14	6.13	6.99	7.96	10.86						
	7	Uranus	C.	29.66	30.67	31.55	32.57	33.57	50 31.63	0.02	54.25	4 49 37.36	- -	
	8		D.	52.19	55.46	56.35	57.26	58.16						
	9		B.	7.23	8.11	9.07	10.03	12.85						
	10	ε Leporis	C.	31.70	32.69	33.61	34.66	35.60	0 33.70	0.01	54.25	4 59 39.44	7.29	
	11		D.	54.48	57.38	58.38	59.37	0.42						
	12		B.	26.07	26.96	27.95	28.86	31.64						
	†13	β Orionis	C.	49.12	50.08	51.03	52.03	52.81	8 50.98	0.01	54.25	5 7 56.72	8.00	
	14		D.	10.38	13.11	13.99	14.91	15.81						
	†15	δ Ursæ Minoris, S. P.	B.	9.00	52.50	37.00	22.50	- -	20 36.87	3 22.17	54.28	18 16 20.42	- -	
	†16		C.	43.00	28.00	14.50	- -	- -						
	17		C.	39.20	40.25	41.11	42.04	42.99						
	18	γ Geminorum	D.	1.13	4.00	4.81	5.81	6.77	31 4.45	23.39	54.28	6 29 46.78	9.39	
	19		E.	24.67	25.77	28.49	29.33	30.43						
	20		B.	34.91	35.77	36.73	37.71	40.47						
	21	Sirius	C.	58.71	59.67	0.49	1.38	2.22	40 0.51	0.01	54.28	6 39 6.22	7.50	
	22		D.	20.61	23.29	24.23	25.32	26.13						
	23	51 Cephei	D.	54.00	53.00	10.50	28.00	44.00	44 1.90	—7 48.35	54.28	6 35 19.27	- -	
	24	δ Geminorum	B.	- -	24.07	25.03	25.94	28.68	12 37.68	+ 11.80	54.30	7 11 55.18	9.67	
	25		C.	47.38	48.52	49.50	50.42	51.36						
	26		A.	48.07	49.09	49.97	52.90	53.98						
	27		B.	12.95	13.97	14.98	15.99	18.76						
	28	Moon's 2d Limb	C.	37.91	38.93	39.80	40.79	41.61	24 39.79	0.01	54.30	7 23 45.50	- -	
	29		D.	0.54	3.78	4.77	5.61	6.47						
	30		E.	25.62	26.74	29.56	30.47	31.43						
	31		A.	37.08	37.89	38.71	41.66	42.68						
	32	f Geminorum	B.	1.03	1.97	2.74	3.74	6.69	32 3.25	+ 23.58	54.30	7 31 32.53	9.28	
	33		C.	25.19	25.92	26.84	27.82	28.80						
	34		C.	59.53	0.35	1.10	2.05	2.79						
	35	α Canis Minoris	D.	20.41	22.96	23.91	24.86	25.67	33 23.60	— 22.52	54.30	7 32 6.78	8.50	
	36		E.	43.33	44.25	46.66	47.63	48.53						
	37	χ Geminorum	C.	1.47	2.62	3.57	4.68	5.57	37 3.58	0.02	54.30	7 36 9.26	9.71	
	38		C.	43.81	44.96	45.98	46.91	47.80						
19	†39	Sun's 2d Limb	D.	7.08	9.93	10.88	11.96	12.81	53 10.46	24.61	54.79	17 50 39.78	- -	
	40		E.	31.90	32.77	35.88	36.66	37.56						
	†41	α Lyræ	E.	3.56	4.69	7.88	8.99	10.17	34 7.06	- -	- -	- - - -	- -	
	42		B.	32.81	33.75	34.70	35.60	38.36						
	43	α Aquilæ	C	55.79	56.81	57.57	58.49	59.40	44 57.66	0.12	54.93	19 44 2.61	5.52	
	44		D.	17.07	19.81	20.75	21.54	22.40						
	45		B.	30.32	31.26	32.37	33.43	36.61						
	46	ζ Cygni	C.	56.46	57.49	58.47	59.57	0.53	7 58.56	0.09	54.99	21 7 3.48	4.85	
	47		D.	20.60	23.85	24.86	25.82	26.80						
	48		B.	32.30	33.27	34.19	35.13	37.98						
	†49	Venus, 1st Limb	C.	56.29	57.27	58.31	59.21	0.09	13 58.22	0.17	55.00	21 13 4.00	- -	
	50		D.	18.35	21.36	22.28	23.26	24.06						
	51		C.	11.07	11.92	12.81	13.75	14.57						
	52	β Aquarii	D.	32.08	34.80	35.78	36.60	37.44	25 35.34	— 22.67	—55.01	21 24 17.66	— 6.48	
	53		E.	54.92	55.91	58.62	59.51	0.31						

13. Blurred.
15–16. Badly blurred.
39. Set C. uncertain, D. and E. good. Cor. for semi-diameter, —1 m. 11.28 s.
41. Tremulous.
49. Correction for semi-diameter, +0.95 s.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m.	n.	c.
h.	s.	s.	s.	s.	s.
Dec. 19, 17.8	— 54.79	— 0.056	+ 0.060	— 0.014	— 0.073

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
	1		B.	5.41	6.31	7.27	8.18	10.96						
Dec. 19	2	ζ Pegasi	C.	28.57	29.61	30.41	31.21	32.08	35 30.42	— 0.16	—55.07	22 34 35.19	— 6.43	N.
	3		D.	49.79	- -	53.57	54.44	55.22						
	4		B.	31.31	32.27	33.10	33.96	36.72						
	5	Neptune	C.	54.06	55.04	55.85	56.65	57.58	58 55.88	0.13	55.14	23 58 0.61	- -	
	6		D.	15.07	17.83	18.77	19.59	20.44						
	7		B.	43.73	44.81	45.77	46.73	49.94						
	8	α Andromedæ	C.	9.74	10.67	11.71	12.67	13.61	2 11.69	0.09	55.14	0 1 16.46	7.15	
	9		D.	33.54	36.62	37.59	38.61	39.57						
	10	Polaris	E.	17.00	53.50	41.00	15.50	51.50	40 11.70	- -	- -	- - - -	- -	Y.
	11		B.	32.08	33.01	34.07	34.91	37.87						
	12	β Arietis	C.	56.37	57.41	58.36	59.23	0.04	47 58.27	0.11	55.17	1 47 2.99	8.29	
	13		D.	18.67	21.61	22.60	23.47	24.35						
	14		B.	49.47	50.44	51.32	52.14	54.80						
	15	Weisse, 978	C.	12.31	13.31	14.22	15.09	15.90	56 14.25	0.12	55.18	1 55 18.95	8.01	
	16		D.	33.63	36.57	37.42	38.17	39.03						
	17		B.	3.70	4.58	5.53	6.47	9.17						
	†18	19 Arietis	C.	27.16	28.07	28.94	29.86	30.76	6 29.01	0.11	55.19	2 5 33.71	8.29	
	19		D.	48.87	51.67	52.67	53.45	54.31						
	20		B.	38.33	39.23	40.21	41.13	43.79						
	21	67 Ceti	C.	1.30	2.22	3.08	4.04	4.87	11 3.13	0.15	55.19	2 10 7.79	7.68	
	22		D.	22.50	25.29	26.18	26.99	27.84						
	23		B.	21.66	22.65	23.62	24.60	27.28						
	24	ξ^2 Ceti	C.	44.84	45.71	46.61	47.52	48.41	21 46.61	0.12	55.20	2 20 51.28	8.16	
	25		D.	5.95	8.73	9.70	10.54	11.32						
	26		B.	33.50	34.44	35.35	36.11	38.83						
	27	Weisse, 437	C.	56.32	57.25	58.13	59.07	59.90	27 58.18	0.14	55.21	2 27 2.83	7.73	
	28		D.	17.47	20.31	21.19	21.99	22.90						
	29		B.	13.61	14.57	15.53	16.39	19.09						
	30	Weisse, 576	C.	36.57	37.54	38.37	39.26	40.18	34 38.36	0.14	55.21	2 33 43.01	7.79	
	31		D.	57.61	0.42	1.31	2.12	2.91						
	32		B.	0.22	1.04	1.97	2.91	5.55						
	33	Weisse, 640	C.	23.00	23.95	24.80	25.67	26.60	38 24.85	0.14	55.22	2 37 29.49	7.82	
	34		D.	43.99	46.91	47.87	48.68	49.55						
	35		B.	57.71	58.68	59.56	0.41	3.18						
	36	Weisse, 762	C.	20.58	21.51	22.33	23.23	24.07	45 22.34	0.14	55.22	2 44 26.98	7.96	
	37		D.	41.57	44.23	45.18	46.01	46.87						
	38	Weisse, 846	A.	31.44	32.30	33.27	35.98	36.92	49 48.88	— 0.06	55.23	2 48 53.60	8.03	
	39		E.	0.93	1.79	4.60	5.38	6.20						
	40		A.	18.67	19.62	20.50	23.29	24.13						
	41	Weisse, 853	B.	41.63	42.51	43.37	44.28	47.08	49 43.75	+ 22.32	55.23	2 49 10.85	8.04	
	42		C.	4.42	5.41	6.28	7.13	7.97						
	43		C.	59.60	0.51	1.46	2.31	3.16						
	44	α Ceti	D.	20.67	23.46	24.48	25.25	26.10	56 23.87	— 22.58	55.23	2 55 6.06	8.19	
	45		E.	43.38	44.29	46.93	47.83	48.68						
	46		B.	2.49	3.49	4.40	5.32	8.30						
	47	B. Z., 337, 32	C.	26.27	27.31	28.20	29.08	29.99	5 28.20	0.11	55.24	3 4 32.85	8.81	
	48		D.	48.21	51.11	52.07	52.90	53.85						
	49		B.	32.51	33.55	34.47	35.53	38.31						
	50	B. Z., 530, +23° 50′	C.	57.58	58.49	59.48	0.39	1.26	8 59.45	0.10	55.24	3 8 4.10	9.20	
	51		D.	20.40	23.52	24.49	25.41	26.38						
	52		B.	45.47	46.47	47.47	48.53	51.51						
	†53	✱ (9. 10) +23° 48′	C.	10.61	11.55	12.45	13.41	14.41	11 12.42	— 0.10	—55.25	3 10 17.07	— 9.22	
	54		D.	33.51	36.36	37.31	38.20	39.12						

18. Unsteady.
53. Dim.
Azimuth, December 19, from Polaris and clock stars for first part; for second part from δ Ursæ Minoris, S. P., 51 (Hev.) Cephei and Polaris, S. P.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m.	n.	c.
h.	s.	s.	s.	s.	s.
Dec. 19, 5.2	— 55.35	— 0.051	— 0.062	+ 0.088	— 0.073
19, 10.5	— 55.69	— 0.079	+ 0.073	— 0.080	— 0.073

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
Dec. 19	†1	B. A. C., 1061	B.	44.50	58.50	12.50	26.00	7.00	20 7.10	+2 49.31	—55.25	3 22 1.16	— 57.83	Y.
	†2		C.	30.00	43.50	56.00	10.00	23.00						
	3		B.	47.98	48.87	49.87	50.86	53.92						
	4	η Tauri	C.	12.77	13.80	14.73	15.80	16.76	40 14.81	— 0.10	55.28	3 40 19.43	— 9.44	
	5		D.	35.76	38.87	39.80	40.68	41.66						
	6		A.	37.50	22.00	6.00	20.00	3.00						
	7		B.	11.00	55.00	39.00	23.00	40.00						
	8	δ Ursæ Minoris, S. P.	C.	45.00	29.50	17.00	0.00	46.00	17 15.08	+ 2.13	55.38	18 17 21.83	+ 67.64	
	9		D.	50.50	6.00	48.50	34.00	20.00						
	10		E.	25.00	8.00	24.00	10.00	57.00						
	11		C.	37.50	58.00	15.00	35.00	53.00						
	12	51 (Hev.) Cephei	D.	53.00	53.00	12.00	29.50	47.00	44 2.30	—7 48.94	55.40	6 35 17.96	— 98.55	
	13		E.	50.00	8.00	3.50	20.50	39.50						
	14		B.	2.91	3.88	4.88	5.69	8.75						
	15	γ Canis Majoris	C.	26.64	27.58	28.55	29.48	30.47	58 28.55	+ 0.02	55.43	6 57 33.14	7.64	
	16		D.	48.61	51.38	52.24	53.14	54.05						
	17		B.	38.41	39.58	40.86	41.89	45.95						
	18	B. Z., 492, 6	C.	8.86	10.13	11.44	12.77	13.93	7 11.49	— 0.10	55.44	7 6 15.96	11.53	
	19		D.	37.13	41.00	42.29	43.51	44.66						
	20		B.	23.90	24.95	25.98	27.11	29.91						
	21	δ Geminorum	C.	48.60	49.77	50.68	51.66	52.58	12 50.66	0.04	55.44	7 11 55.18	9.69	
	22		D.	11.27	14.46	15.36	16.32	17.32						
	23		B.	2.32	3.26	4.18	4.96	7.88						
	24	*f* Geminorum	C.	26.41	27.31	28.18	29.09	29.88	32 28.12	— 0.03	55.46	7 31 32.62	9.33	
	25		D.	48.20	51.10	52.18	52.97	53.84						
	26		B.	41.07	42.06	43.03	44.08	47.16						
	27	Lacaille, 3012	C.	6.12	7.13	7.99	9.07	9.93	46 8.06	+ 0.03	55.48	7 45 12.61	7.17	
	28		D.	28.91	32.16	33.09	34.11	35.03						
	29		B.	32.19	33.20	34.17	35.18	38.52						
	30	6 Cancri	C.	58.11	59.10	0.11	1.08	2.12	56 0.12	— 0.05	55.49	7 55 4.58	9.88	
	31		D.	21.86	25.08	26.08	27.08	27.99						
	32		B.	31.91	32.88	33.77	34.68	37.53						
	33	12 Cancri	C.	55.43	56.46	57.30	58.28	59.03	1 57.27	— 0.02	55.50	8 1 1.76	8.96	
	34		D.	17.00	19.87	20.80	21.67	22.51						
	35		A.	25.51	26.45	27.38	30.25	31.25						
	36	ζ^1 Cancri	C.	13.58	14.58	15.52	16.37	17.22	5 15.40	+ 0.05	55.50	8 4 19.95	9.18	
	37		E.	59.47	0.45	3.45	4.32	5.22						
	38	ζ^2 Cancri	B.	49.96	50.81	51.76	52.68	55.60	5 15.75	— 0.03	55.50	8 4 20.22	9.18	
	39		D.	35.86	38.93	39.71	40.68	41.55						
	40		A.	59.22	0.08	1.07	3.79	4.84						
	41		B.	23.74	24.58	25.54	26.41	29.53						
	42	Moon's 2d Limb	C.	47.92	48.89	49.78	50.80	51.73	17 49.83	0.00	55.51	8 17 54.33	- -	
	43		D.	10.31	13.29	14.31	15.17	16.09						
	44		E.	34.72	35.67	38.58	39.43	40.39						
	45		B.	14.81	15.79	16.86	17.85	20.70						
	46	η Cancri	C.	39.25	40.41	41.21	42.26	43.11	25 41.25	0.04	55.52	8 24 45.69	9.20	
	47		D.	1.84	4.71	5.74	6.64	7.53						
	48		B.	21.96	22.97	23.91	24.84	27.80						
	49	δ Cancri	C.	46.08	47.08	48.05	48.89	49.88	37 47.98	0.03	55.54	8 36 52.42	9.00	
	50		D.	8.23	11.09	12.04	13.03	13.89						
	51		B.	0.80	1.67	2.67	3.56	6.26						
	52	ε Hydræ	C.	23.73	24.67	25.56	26.49	27.28	40 25.56	— 0.01	—55.54	8 40 30.02	— 8.39	
	53		D.	44.91	47.58	48.60	49.41	50.28						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
Dec. 19, 5.2	— 55.35	— 0.051	— 0.062	+ 0.088	— 0.073
19, 10.5	— 55.69	— 0.079	+ 0.073	— 0.080	— 0.073

1–2. Through clouds.

Dec. 19. 3*h.* 50*m.* Image west 0.08 *r.* Clamp west.
19. 8*h.* 45*m.* Image west 0.08. Clamp west.

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s	s.	s.	s.	s.	m. s.	m. s.	s.	h. m s.	s.	
	1		B.	20.18	21.08	21.96	22.90	25.60						
Dec. 19	2	θ Virginis - - - -	C.	43.00	43.91	44.89	45.77	46.61	3 44.85	+ 0.01	—55.89	13 2 48.96	— 6.76	Y.
	3		D.	4.13	6.81	7.72	8.62	9.51						
	4		B.	30.00	53.00	15.00	38.00	48.00						
	5	Polaris, S. P. - - -	C.	9.00	31.00	57.00	17.00	43.00	9 54.53	+ 6.25	55.90	1 9 4.88	60.24	
	6		D.	59.00	10.00	31.00	56.00	21.00						
	7		C.	50.05	51.07	51.90	52.85	53.71						
	†8	α Virginis - - - -	D.	11.43	14.16	15.22	16.08	16.88	19 14.71	— 22.77	55.91	13 17 56.03	6.79	
	9		E.	34.61	35.49	38.13	39.06	39.91						
	10		A.	13.18	14.15	14.96	17.81	18.87						
	11		B.	37.13	38.08	39.08	39.96	42.81						
20	†12	α Canis Majoris - - -	C.	0.87	1.83	2.76	3.67	4.53	40 2.70	0.09	56.43	- - - -	- -	N
	13		D.	22.82	25.49	26.53	27.43	28.26						
	14		E.	46.57	47.55	50.08	51.10	51.94						
	15		C.	27.92	28.85	29.78	30.60	31.39						
	†16	γ Canis Majoris - - -	D.	49.50	52.51	53.41	54.30	55.16	58 52.92	23.35	56.44	- - - -	- -	
	17		E.	13.16	14.07	16.91	17.71	18.51						
	18		A.	43.92	44.84	45.81	48.49	49.60						
	19		B.	8.08	8.87	9.71	10.65	13.62						
	†20	Moon's 2d Limb - -	C.	31.58	32.55	33.37	34.40	35.20	9 33.54	0.09	56.58	9 8 36.87	- -	
	21		D.	53.71	56.49	57.47	58.46	59.26						
	22		E.	17.53	18.40	21.37	22.16	22.96						
21	†23	Sun's 1st Limb - -	E.	4.71	5.76	8.38	9.51	10.81	0 7.83	49.10	57.11	17 58 21.62	- -	
	24		B.	14.55	15.60	16.59	17.43	20.21						
	†25	Sun's 2d Limb - -	C.	39.57	40.61	41.74	42.54	43.31	1 41.48	0.12	57.11	18 0 44.25	- -	
	26		D.	2.47	5.59	6.48	7.31	8.24						
	27		B.	40.55	41.56	42.92	44.26	47.62						
	†28	α Lyræ - - - - -	C.	9.99	11.00	11.99	13.00	14.25	33 12.07	0.13	57.12	18 32 14.82	2.97	
	29		D.	36.58	40.24	41.17	42.37	43.57						
	30		B.	35.11	36.04	36.85	37.72	40.57						
	31	α Aquilæ - - - - -	C.	58.18	59.07	59.82	0.77	1.52	44 59.91	0.11	57.21	19 44 2.59	5.53	
	32		D.	19.17	22.10	23.05	23.92	24.77						
	†33	β Aquilæ - - - - -	E.	11.32	12.21	14.87	15.72	16.54	50 14.13	45.15	57.22	19 48 31.76	5.61	
	†34		D.	2.38	5.24	6.37	7.26	8.08	21 17.57	35.40	57.31	21 20 45.82	- -	
	†35	Venus, 1st Limb - -	E.	26.31	27.19	30.10	30.89	31.89						
	36		B.	50.17	51.10	52.11	52.92	55.65						
	37	β Aquarii - - - -	C.	13.12	14.03	14.86	15.81	16.61	25 14.98	0.11	57.31	21 24 17.56	6.47	
	38		D.	34.29	37.11	37.99	38.79	39.71						
	39		A.	7.84	8.86	9.85	12.79	13.91						
	40		B.	32.98	33.97	34.91	35.94	38.97						
	†41	ε Leonis - - - - -	C.	57.98	58.93	59.97	1.04	1.91	38 59.95	0.06	57.21	9 38 2.68	8.81	Y.
	42		D.	21.12	24.09	25.12	26.05	26.89						
	43		E.	46.00	47.09	49.92	50.95	51.81						
	44		A.	6.16	7.03	7.92	10.67	11.73						
	45		B.	29.38	30.33	31.21	32.07	34.85						
	†46	π Leonis - - - - -	C.	52.31	53.24	54.15	55.00	55.89	53 54.15	0.06	57.22	9 52 56.88	— 8.10	
	47		D.	13.57	16.37	17.30	18.17	19.07						
	48		E.	36.58	37.52	40.26	41.11	41.93						
	49		A.	23.63	24.62	25.52	28.16	29.12						
	50		B.	47.20	48.08	49.05	49.97	52.83						
	†51	Moon's 2d Limb - -	C.	10.68	11.56	12.47	13.36	14 32	0 12.48	— 0.06	—57.22	9 59 15.20	- -	
	52		D.	32.34	35.12	35.96	36.90	37.75						
	53		E.	55.87	56.62	59.51	0.32	1.10						

8. Unsteady.
12. Set D. through clouds. In obtaining clock error the A.R. for 1860 has been assumed as 6*h.* 38*m.* 58.61*s.*
16. Scarcely visible, owing to clouds.
20. C., D., and E, very uncertain, owing to clouds.
23. Very tremulous.
25. Excessively undulating.
28. Tremulous and blurred.
33. Very faint.
34–35. Correction for semi-diam., +0.96 *s.*
41. Through clouds.
46, 51. Steady.

Dec. 20. 8*h.* 20*m.* Image west 0.17 *r.* Clamp west.
Dec. 21. 10*h.* 35*m.* Image west 0.02. Clamp west.
} Dec. 20 and 21. The azimuth has been estimated.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
Dec. 20, 15.5	— 56.96	— 0.060	— 0.040	— 0.007	— 0.073
21, 10.0	— 57.22	— 0.040	— 0.016	— 0.007	— 0.073

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s	s.	s	s.	m. s.	m. s.	s.	h. m. s.	s.	
	1		A.	29.88	30.88	31.87	34.71	35.83						
Dec. 21	2		B.	54.26	55.32	56.30	57.24	0.24						
	3	γ^1 Leonis - - - - -	C.	18.75	19.63	20.65	21.54	22.44	13 20.58	— 0.06	—57.23	10 12 23.29	— 8.36	Y.
	4		D.	41.05	44.08	44.97	45.91	46.84						
	5		E.	5.42	6.41	9.30	10.13	10.98						
	6	ρ Leonis - - - - -	D.	- -	53.62	54.62	55.58	56.41	26 55.06	23.68	57.24	10 25 34.13	7.91	
	7		B.	22.67	23.45	24.32	25.33	28.00						
23	8	ε Piscium - - - -	C.	45.71	46.62	47.44	48.39	49.25	56 47.43	0.09	59.00	0 55 48.34	- -	N.
	9		D.	6.81	9.44	10.49	11.26	12.21						
	10	Polaris - - - - -	C.	51.00	29.00	2.00	39.00	13.00	10 2.80	3.15	59.01	1 9 0.64	- -	
	11		B.	36.31	37.29	38.17	38.98	41.95						
	12	l Leonis - - - - -	C.	59.52	0.43	1.28	2.30	3.17	43 1.37	0.09	59.72	10 42 1.56	7.86	
	13		D.	20.92	23.74	24.60	25.51	26.37						
	14		B.	- -	21.80	23.64	25.56	31.26						
	15	α Ursæ Majoris - - -	C.	9.07	10.91	12.87	14.83	16.71	56 13.33	0.58	59.73	10 55 13.02	9.75	
	16		D.	54.81	0.27	2.43	4.20	6.01						
	17		B.	20.79	21.72	22.62	23.62	26.61						
	18	δ Leonis - - - - -	C.	45.11	46.12	46.99	48.05	48.87	7 47.13	0.10	59.74	11 6 47.29	7.85	
	19		D.	7.81	10.71	11.76	12.64	13.54						
	20		B.	15.51	16.31	17.37	18.13	20.85						
	21	ϕ Leonis - - - - -	C.	38.06	39.11	39.95	40.82	41.67	10 39.99	0.08	59.75	11 9 40.16	7.44	
	22		D.	59.39	1.89	2.77	3.61	4.47						
	23		B.	26.87	27.78	28.62	29.58	32.35						
	24	τ Leonis - - - - -	C.	49.79	50.75	51.58	52.32	53.11	21 51.51	0.08	59.76	11 20 51.67	7.46	
	25		D.	10.70	13.53	14.42	15.19	16.05						
	26	λ Draconis - - - -	C.	6.89	9.60	12.25	14.44	17.09	24 12.05	0.27	59.76	11 23 12.02	— 9.36	
	†27	B. A. C., 8213, S. P. -	C.	14.20	57.70	43.80	- -	- -	28 58.57	— 13.68	59.77	23 27 45.12	+ 4.39	
	†28	γ Cephei, S. P. - - -	C.	50.08	46.31	41.82	37.61	33.82	34 41.93	+ 0.27	59.78	23 33 42.42	— 4.55	
	29	Saturn, 1st Limb - -	B.	45.33	46.28	47.16	48.09	50.66	37 9.98	— 0.08	59.78	11 36 10.12	- -	
	30		D.	29.26	31.95	32.77	33.72	34.54						
	31	Saturn, 2d Limb - -	C.	9.26	10.23	11.14	12.10	12.90	37 11.13	0.08	59.78	11 36 11.27	- -	
	32		A.	- -	- -	45.67	48.50	49.45						
	33		B.	7.35	8.34	9.23	10.02	12.90						
	†34	Moon's 2d Limb - -	C.	30.64	31.70	32.60	33.42	34.34	41 32.78	0.36	59.79	11 40 32.63	- -	
	35		D.	52.15	55.06	55.87	56.78	57.64						
	36		E.	15.56	16.51	19.17	20.08	20.89						
	37		C.	29.56	30.46	31.47	32.31	33.15						
	38	β Virginis - - - -	D.	50.51	53.31	54.32	55.20	55.92	44 53.82	22.50	59.79	11 43 31.54	7.40	
	39		E.	13.46	14.38	16.99	17.81	18.61						
	40	Jupiter, 1st Limb - -	A.	51.50	52.36	53.24	55.98	56.88	51 38.89	0.00	59.80	11 50 39.09	- -	
	41		E.	21.03	21.92	24.45	25.36	26.23						
	42		B.	16.76	17.78	18.68	19.58	22.35						
	43	Jupiter, 2d Limb - -	C.	39.66	40.57	41.49	42.34	43.23	51 41.47	0.08	59.80	11 50 41.59	- -	
	44		D.	0.59	3.51	4.33	5.23	5.97						
	45	B. A. C., 4070 - - -	C.	19.50	34.00	48.50	2.00	15.50	58 47.90	1.28	59.81	11 57 46.81	9.08	
	46		B.	27.11	28.04	28.97	29.81	32.55						
	47	η Virginis - - - -	C.	49.83	50.82	51.55	52.53	53.47	13 51.69	0.08	59.83	12 12 51.78	— 7.11	
	48		D.	10.89	13.56	14.48	15.37	16.31						
	†49	B. A. C., 4165 - - -	C.	- -	- -	22.00	57.00	27.50	15 55.50	36.50	59.83	12 14 19.17	+ 0.69	
	50	κ Draconis - - - -	D.	32.52	40.58	43.69	45.97	48.50	30 15.72	—1 41.16	—59.85	12 27 34.71	— 5.82	
	51		E.	40.61	43.59	51.31	53.81	56.67						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m.	n.	c.
h.	s.	s.	s.	s.	s.
Dec. 23, 10.8	— 59.72	— .073	— .030	— .035	— .043

27. Very steady.
28. Badly blurred.
34. Somewhat blurred.
49. The recorded passage of wire IV has been increased 10 seconds.
Dec. 23 to 27. The azimuth for N.'s observations has been obtained by taking a mean of the azimuths resulting from the observations of Polaris and ζ Ursæ Minoris during that period.

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s	m. s.	s.	h. m. s.	s.	
	1		A.	53.33	54.34	55.14	57.89	58.95						
Dec. 23	2	γ^1 Virginis - - - -	B.	16.33	17.28	18.16	18.97	21.77	35 18.40	+ 22.38	—59.85	12 34 40.93	— 6.93	N
	3		C.	38.91	39.90	40.81	41.77	42.53						
	4	B. A. C., 240, S. P. - -	C.	0.00	29.00	0.50	29.00	4.50	48 0.60	2.77	59.86	0 47 3.51	35.25	
	5	Polaris, S. P. - - -	C.	59.00	32.00	56.00	20.50	46.00	9 54.70	3.11	59.90	1 8 57.91	- -	
	6		D.	15.67	18.38	19.44	20.30	21.17						
	7	α Virginis - - - -	E.	38.81	39.77	42.40	43.39	44.27	19 30.36	— 34.24	59.91	13 17 56.21	6.92	
	8		B.	56.11	56.97	57.99	58.87	1.92						
	9	α Bootis - - - - -	C.	20.22	21.28	22.16	23.20	24.07	10 22.23	— 0.09	59.97	14 9 22.17	5.67	
	10		D.	42.62	45.56	46.51	47.48	48.43						
	11		A.	12.17	13.04	13.99	16.99	18.02						
24	†12	Sun's 2d Limb - -	B.	37.08	38.00	39.10	40.06	42.95	15 39.39	+ 24.49	60.04	18 13 52.55	- -	
	13		C.	1.94	2.98	3.91	4.89	5.75						
	14		B.	43.57	44.56	45.77	46.95	50.43						
	†15	α Lyræ - - - - -	C.	12.70	14.00	14.92	16.04	17.04	33 14.96	— 0.12	- -	- - - -	- -	
	16		D.	39.52	43.17	44.11	45.36	46.21						
	17		D	20.59	23.32	24.27	25.13	25.91						
	18	γ Piscium - - - -	E.	43.31	44.27	46.96	47.85	48.63	11 35.02	33.73	- -	- - - -	— 6.84	
	19	B. A. C., 8213 - - -	D	7.00	51.20	7.00	21.50	35.00	35 0.34	—6 14.32	60.09	23 27 45.93	+ 4.58	
	20		B.	48.81	46.35	43.48	40.90	32.63						
	21	κ Draconis, S. P. - -	C.	40.56	37.74	35.31	32.11	29.80	28 35.08	+ 0.19	60.10	12 27 35.17	— 5.84	
	22		D.	37.41	29.61	26.35	23.86	21.27						
	23		C.	31.14	34.72	37.65	41.30	44.04						
	†24	21 Cassiopeæ - - - -	D.	58.55	8.41	12.10	15.20	18.36	38 19.15	— 41.63	60.10	0 36 37.42	9.33	
	†25	B. A. C., 240 - - -	C.	7.50	37.00	7.00	37.00	4.50	48 6.60	2.85	60.10	0 47 3.65	34.58	
	26	2 Ursæ Minoris - - -	C	- -	25.00	35.50	47.50	59.00	51 41.75	6.80	60.10	0 50 34.85	18.56	
	27	Polaris - - - - -	C.	50.00	25.00	2.50	38.00	13.00	10 1.70	3.19	60.10	1 8 58.41	- -	
	28		A.	21.21	22.11	22.97	25.70	26.65						
	29		B.	44.31	45.22	46.05	46.99	49.80						
	30	θ^1 Ceti - - - - - -	C.	7.46	8.33	9.31	10.18	10.99	18 9.16	0.04	- -	- - - -	7.36	
	31		D.	28.59	31.42	32.24	33.08	33.94						
	32		E.	51.66	52.49	55.28	56.16	56.87						
	33		B.	57.70	58.73	59.90	0.97	4.96						
	34	B. Z., 498, 52 - - -	C.	27.49	28.67	29.76	30.85	31.91	38 39.35	9.80	60.04	10 37 29.21	8.79	Y.
	35		E.	24.17	25.18	28.86	30.08	31.07						
	36		B.	36.63	37.58	38.55	39.57	42.08						
	37	l Leonis - - - - -	C.	59.80	0.80	1.73	2.68	3.61	43 1.77	0.11	60.04	10 42 1.61	7.89	
	38		D.	21.35	24.10	25.08	25.97	26.91						
	39		B.	49.22	50.21	51.27	52.44	55.81						
	40	Anon., (9) +35° 56′ -	C.	17.84	18.95	19.84	20.81	21.70	51 19.63	0.11	60.05	10 50 19.48	8.43	
	41		D.	43.21	46.82	47.83	48.76	49.80						
	42		B.	30.65	31.66	32.52	33.33	36.12						
	43	χ Leonis - - - - -	C.	53.56	54.46	55.33	56.30	57.07	58 55.43	0.12	60.05	10 57 55.26	7.66	
	44		D.	14.67	17.56	18.43	19.47	20.31						
	45		B.	30.43	31.37	32.29	33.08	35.88						
	46	Weisse, 221 - - -	C.	53.39	54.35	55.23	56.09	56.93	14 55.23	0.12	60.07	11 13 55.05	7.58	
	47		D.	14.58	17.44	18.27	19.14	19.99						
	48		B.	45.77	46.62	47.68	48.52	51.28						
	49	B. A. C., 3892 - - -	C.	8.81	9.79	10.61	11.53	12.45	20 10.69	— 0.12	60.07	11 19 10.50	7.59	
	50		D.	30.22	32.96	33.87	34.75	35.52						
	51		A.	33.86	34.86	35.73	38.51	39.48						
	52	Weisse, 462 - - -	B.	56.99	57.86	58.68	59.62	2.54	27 59.08	+ 22.41	—60.08	11 27 21.41	— 7.38	
	53		C.	19.80	20.77	21.57	22.56	23.45						

12. Through clouds. Correction for semi-diameter, —71.29s.
15. Tremulous.
24. Set D. seems to be 10s. small.
25. Very steady.
Azimuth for Y.'s observations of 24th from Polaris and α Virginis.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m.	n.	c.
h.	s.	s.	s.	s.	s.
Dec. 24, 22.7	— 60.08	— 0.010	— 0.030	— 0.035	— 0.043
24, 12.0	— 60.11	— 0.051	— 0.077	+ 0.030	— 0.043

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Date.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
	1		C.	38.21	39.00	39.97	40.91	41.77						
Dec. 24	2	Weisse, 466 - - -	D.	59.22	2.00	2.87	3.86	4.70	29 2.52	— 22.61	—60.08	11 27 39.83	— 7.38	Y.
	3		E.	22.17	23.07	25.83	26.71	27.55						
	4		B.	55.16	56 09	56.98	57.82	0.66						
	5	Weisse, 662 - - -	C.	18.13	18.91	19.77	- -	21.47	39 19.80	— 0.04	60.09	11 38 19.67	7.40	
	6		D.	39.20	41.98	42.88	43.72	44.61						
	7		C.	31.00	18.00	6.00	52.50	41.50						
	8	B. A. C., 8336, S. P. -	D.	34.00	55.50	42.00	30.00	18.50	51 26.90	+2 38.36	60.10	23 53 5.15	1.87	
	9		C.	19.50	32.00	46.50	1.50	14.00						
	10	B. A. C., 4070 - - -	D.	49.00	31.00	46.50	59.00	13.00	1 43.20	—2 56.38	60.11	11 57 46.71	9.53	
	11		B.	27.39	28.30	29.27	30.19	32.89						
	12	η Virginis - - - -	C.	50.12	51.15	51.81	52.84	53.85	13 52.01	0.12	60.12	12 12 51.77	7.13	
	13		D.	11.25	14.06	14.87	15.71	16.51						
	14		B.	15.88	16.72	17.71	18.62	21.41						
	15	q Virginis - - - -	C.	38.79	39 71	40.65	41.56	42.33	27 40.68	0.12	60.13	12 26 40.43	7.05	
	16		D.	59.99	2.82	3.80	4.72	5.54						
	17		A.	32.30	33.25	34.09	36.87	37.88						
	18		B	56.09	57 06	57.97	58.91	1.54						
	19	Moon's 2d Limb - -	C.	19.63	20.51	21.51	22.43	23.23	34 21.52	0.10	60.14	12 33 21.28	- -	
	20		D	41.49	44.36	45.37	46.19	47.15						
	21		E.	5.13	5.95	8.76	9.73	10.61						
	22		B.	47.07	47.87	48.72	49.64	52.38						
	23	ψ Virginis - - - -	C.	10.07	10.92	11.71	12.68	13.47	48 11.78	0.12	60.15	12 47 11.51	7.03	
	24		D.	31.13	33.87	34.83	35.77	36.63						
	25		C.	39.29	40.25	41.22	42.11	42.97						
	26	g Virginis - - - -	D.	0.72	3.53	4.46	5.32	6.18	2 3.95	22.88	60.16	13 0 40.91	7.01	
	27		E.	23.76	24.61	27.47	28.29	29.06						
	28		C.	47.51	48.40	49.25	50.20	50.96						
	29	θ Virginis - - - -	D.	8.56	11.42	12.29	13.16	13.97	4 11.80	22.61	60.16	13 2 49.03	6.91	
	30		E	31.50	32.34	34.98	35.76	36.66						
	31		B.	32.00	55.50	18.00	41.00	54.00						
	32	Polaris, S. P. - - -	C.	10.00	32.00	58.00	20.00	47.00	9 57.37	- -	- -	- - - -	- -	
	33		D	3.00	10.00	34.00	0.00	26.00						
	34		B.	31.37	32.21	33.19	34.15	37.17						
	35	α Virginis - - - -	D.	16.09	18.91	19.82	20.73	21.70	18 56.53	0.12	60.17	13 18 56.23	6.94	
	36		B.	6.57	7.89	8.96	9.75	12.12						
25	†37	Venus, 1st Limb - -	C	30.30	31.47	32.42	33.29	34.13	36 32.45	0.07	60.48	21 35 32.90	- -	N.
	38		D.	52.67	55.37	36.35	57.22	58.23						
	39		B.	46.48	47.36	48.06	48.97	51.66						
	40	Neptune - - - -	C	8.63	9.71	10.62	11.51	12.46	59 10.73	0.08	60.65	23 58 10.00	- -	
	41		D.	29.83	32.62	33.57	34.35	35.16						
	42		B.	49.11	49.97	51.18	52.27	55.35						
	43	α Andromedæ - - -	C.	15.15	16.31	17.22	18.31	19.28	2 17.17	— 0.10	60.65	0 1 16.42	7.07	
	44		D.	38.87	42.12	43.17	44.11	45.19						
	45	4 Draconis, S. P. - -	C.	52.03	47.37	42.45	38.62	34.51	6 43.00	+ 0.35	60.66	0 5 42.69	7.18	
	46	B. A. C., 4150, S. P. -	C	- -	- -	47.00	28.00	- -	13 37.50	+ 10.88	60.66	12 12 47.72	5.19	
	47	B. A. C., 4165, S. P. -	C	23.00	45.00	17.00	45.00	- -	15 32.50	— 13.53	60.66	12 14 18.31	0.53	
	48		B.	37.03	37.76	38.76	39.53	42.21						
	49	12 Ceti - - - - -	C.	59.77	0.66	1.53	2.43	3.29	24 1.56	— 0.08	60.68	0 23 0.80	7.18	
	50		D.	20.87	23.49	24.46	25.40	26.23						
	51		B.	49.44	46.57	43.90	40.88	33.11						
	†52	κ Draconis, S. P. - -	C.	40.84	38.55	35.51	32.58	30.41	28 35.52	+ 0.19	—60.68	12 27 35.03	— 5.91	
	53		D.	37.91	29.69	27.05	24.53	21.86						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m.	n.	c.
h.	s.	s.	s.	s.	s.
Dec 24, 12.0	— 60.11	— 0.051	— 0.077	+ 0.030	— 0.043
25, 2.3	— 60.81	— 0.070	— 0.030	— 0.035	— 0.043

37. Tremulous. Correction for semi-diameter, +1.00 s.
52. Good observation.

Dec. 24. 13h. 35m. Image east 0.05 r. Clamp west.

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s	s	
Dec. 25	1	α Cassiopeæ	D.	17.31	22.63	24.50	25.86	27.31	34 43.42	— 59.93	—60.69	0 32 42.80	— 7.97	N
	2		E.	58.28	59.96	4.51	6.15	7.72						
	3	21 Cassiopeæ	C.	31.70	35.26	38.35	41.68	44.04	38 19.59	41.62	60.69	0 36 37.28	9.35	
	4		D.	48.75	59.21	2.80	5.63	8.51						
	5	23 Cassiopeæ	C.	32.45	35.99	39.28	42.71	45.61	39 39.21	0.35	60.70	0 38 38.16	9.41	
	6	B. A. C., 240	C.	9.00	37.00	9.50	39.00	7.00	48 8.30	2.64	60.71	0 47 4.95	34.04	
	7	2 Ursæ Minoris	C.	14.00	21.50	37.00	49.00	0.00	51 36.30	1.04	60.72	0 50 34.54	18.36	
	8	Polaris	C.	51.00	27.00	2.50	43.50	14.00	10 3.60	3.19	60.73	1 8 59.68	- -	
	9		B.	45.04	45.87	46.81	47.64	50.49						
	10	θ^1 Ceti	C.	8.00	8.87	9.85	10.73	11.59	18 9.81	0.07	60.74	1 17 9.00	7.35	
	11		D.	29.26	32.08	32.96	33.82	34.16						
	12		B.	37.13	37.98	38.80	39.67	42.62						
	13	Weisse, 209	C.	0.40	1.37	2.23	3.11	3.87	15 2.30	0.09	60.81	2 14 1.40	8.24	
	14		D.	21.93	25.10	25.96	26.75	27.66						
	†15	* (10) +61° 6′	C.	33.13	35.30	36.81	38.81	40.63	20 36.94	0.20	60.81	2 19 35.93	11.79	
	16		B.	47.31	48.16	48.96	49.94	52.72						
	17	γ Ceti	C.	10.11	10.97	11.84	12.76	13.65	37 11.87	0.09	60.83	2 36 10.95	8.01	
	18		D.	31.04	33.81	34.77	35.62	36.45						
	19		B	- -	- -	2.99	4.28	9.07						
	20	η Persei	C.	39.73	41.45	42.91	44.57	45.99	41 43.49	0.83	60.83	2 40 41.83	11.45	
	21		D.	16.42	21.41	22.61	24.23	25.77						
	22		B.	55.23	56.03	56.96	57.82	0.23						
	23	* (10) +14° 49′	C.	18.39	19.37	20.17	21.07	21.89	49 20.59	0.37	60.84	2 48 19.38	8.56	
	24		D.	- -	43.03	43.86	44.80	45.72						
	25	* (10) +14° 49′	C.	36.12	36.91	37.79	38.81	39.69	49 49.50	11.69	60.84	2 48 36.97	8.56	
	26		D.	57.68	0.44	1.59	2.51	3.50						
	27		B.	4.84	5.93	6.96	7.92	10.93						
	28	B. Z., 27.7	C.	29.77	30.91	31.72	32.64	33.53	56 31.69	0.10	60.85	2 55 30.74	8.98	
	29		D.	52.45	55.46	56.62	57.47	58.27						
	30		B.	53.64	54.47	55.22	56.44	59.29						
	†31	η Tauri	C.	18.38	19.35	20.24	21.38	22.33	40 20.32	0.10	60.91	3 39 19.31	9.41	
	32		D.	41.15	44.16	45.44	46.23	47.08						
	33	27 Tauri	B.	34.17	35.04	36.06	37.05	40.91	42 0.93	0.10	60.91	3 41 59.92	9.42	
	34		D.	21.77	24.77	25.81	26.73	27.62						
	35	28 Tauri	C.	0.07	0.92	1.96	3.12	3.97	42 26.43	24.56	60.91	3 41 0.96	9.42	
	36		E.	47.75	48.78	51.77	52.52	53.46						
	37	Rumker, 1104	B.	24.51	25.72	26.69	27.70	30.91	4 52.78	0.11	60.94	4 3 51.73	9.89	
	38		D.	14.37	17.83	18.85	19.70	20.51						
	39		B.	3.75	4.74	5.74	6.66	9.47						
	40	56 Tauri	C.	28.06	29.01	30.08	30.97	31.97	12 30.07	0.10	60.95	4 11 29.02	9.49	
	41		D.	50.63	53.56	54.58	55.45	56.37						
	42		B.	5.67	6.67	7.75	8.66	12.17						
	43	✡ (10) +29° 0′	C.	- -	33.09	33.99	34.87	35.75	23 34.07	— 0.28	60.95	4 22 32.84	10.09	
	44		D.	55.92	59.09	0.07	1.06	1.91						
	45	✡ (10) +29° 0′	B.	22.52	23.45	24.83	25.74	28.68	23 37.71	+ 12.71	60.95	4 22 49.47	10.09	
	46		C.	48.61	49.41	50.39	51.29	52.20						
	47	✡ (10) +28° 26′	D.	31.39	34.54	35.47	36.36	37.26	26 47.61	— 38.33	60.96	4 25 8.32	10.06	
	48		E.	56.87	57.89	0.96	2.14	3.23						
	49		B.	44.91	45.86	46.96	47.92	50.86						
	50	B. Z., 393. 103	C.	9.16	10.52	11.82	12.86	13.75	34 11.91	— 0.39	—60.97	4 33 10.55	— 9.66	
	51		D.	- -	35.48	36.37	37.19	38.18						

15. Faint and uncertain.
31. Blurred. *r.*
Dec. 25. 4*h.* 45*m.* Image east 0. 03. Clamp west.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*m.*	*n.*	*c.*
h.	s.	s.	s.	s.	s.
Dec. 25, 2. 3	— 60. 81	— 0. 070	— 0. 030	— 0. 035	— 0. 043

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
	1		B.	3.17	4.18	5.09	6.03	- -						
Dec. 25	2	B. Z, 393.104	C.	27.95	28.87	29.80	30.83	31.70	34 29.56	+ 0.19	—60.97	4 33 28.78	— 9.66	N.
	3		D.	50.47	53.69	54.62	55.72	56.61						
	4		B.	59.42	0.37	1.44	2.44	5.47						
	5	Uranus	C.	24.10	25.36	26.21	27.15	27.90	49 26.16	— 0.10	60.99	4 48 25.07	- -	
	6		D.	47.10	50.05	50.85	51.84	52.77						
	7		B.	32.83	33.81	34.76	35.63	38.55						
	8	β Orionis	C.	55.92	56.82	57.74	58.61	59.49	8 57.76	0.07	61.01	5 7 56.68	8.02	
	9		D.	17.21	19.96	20.85	21.69	22.53						
	10		B.	2.86	3.86	4.79	5.59	8.38						
27	†11	ε Pegasi	C.	25.91	26.76	27.63	28.57	29.39	38 27.75	0.09	63.30	21 37 24.36	- -	
	12		D.	47.22	50.05	50.88	51.79	52.61						
	13		B	53.13	54.07	54.97	55.87	58.52						
	14	ω Piscium	C.	16.06	16.94	17.83	18.62	19.53	53 17.84	0.09	63.35	23 52 14.40	6.99	
	15		D.	37.19	39.87	40.84	41.60	42.51						
	16		C.	48.78	49.71	50.62	51.47	52.33						
	17	Weisse, 1180	D.	9.92	12.77	13.56	14.38	15.31	59 13.15	22.61	63.43	23 57 47.11	7.11	
	18		E.	32.75	33.65	36.52	37.36	38.18						
	19		B.	39.52	40.51	41.51	42.44	45.12						
	†20	Rumker, 11970	C.	2.57	3.42	4.25	5.20	6.04	1 4.37	0.09	63.44	0 0 0.84	7.03	
	21		D.	23.71	26.40	27.44	28.24	29.12						
	22	Weisse, 476	C.	25.15	26.07	27.04	28.05	28.86	29 38.31	11.39	63.46	0 28 23.46	7.25	
	23		D.	46.38	49.01	49.90	50.88	51.72						
	24		B.	18.31	19.23	20.19	21.24	23.91						
	†25	β Ceti	C.	42.33	43.38	44.24	45.24	46.08	37 44.25	0.06	63.47	0 36 40.72	7.12	
	26		D.	4.52	7.34	8.34	9.33	10.13						
	27	Polaris	C.	- -	- -	- -	42.00	18.00	11 0.00	58.37	63.50	1 8 58.13	- -	
	†28	✡ (8) +14° 49′	E.	24.46	25.42	28.13	29.08	29.81	49 27.38	46.42	63.60	2 47 37.36	— 8.54	
	29	β Ursæ Minoris, S. P.	A.	9.33	5.48	2.06	51.86	47.99	54 16.65	—2 7.51	63.60	14 51 5.54	+ 3.66	
	30		B.	41.77	38.71	35.13	31.93	22.28						
	31		B.	1.13	56.46	52.53	47.61	34.57						
	†32	ζ Ursæ Minoris, S. P.	C.	9.49	5.17	0.98	56.43	52.66	49 0.82	+ 0.35	63.65	15 47 57.52	+ 10.58	
	33		D.	26.93	13.47	9.17	5.02	0.68						
	34		B.	27.82	28.96	29.96	30.82	34.13						
	35	Rumker, 1104	C.	53.61	54.57	55.47	56.56	57.49	4 55.64	— 0.11	63.66	4 3 51.87	— 9.88	
	36		D.	17.76	20.45	21.42	22.32	23.34						
	37		B	48.61	49.38	50.36	51.36	53.92						
	38	46 Tauri	C.	11.50	12.41	13.24	14.13	15.17	7 13.34	0.09	63.66	4 6 9.59	8.66	
	39		D.	32.68	35.47	36.45	37.32	38.09						
	40		B.	6.57	7.51	8.39	9.39	12.31						
	41	56 Tauri	C.	30.93	31.88	32.82	33.81	34.80	12 32.90	0.10	63.67	4 11 29.13	9.48	
	42		D.	53.42	56.47	57.59	58.42	59.27						
	43		B.	.78	.81	.79	.81	.59						
	44	ε Tauri	C.	.97	.92	.82	.77	.66	.86	0.10	63.68	.08	9.38	
	45		D.	.13	.06	.91	.77	.64						
	46		B.	8.88	9.91	10.91	11.87	15.09						
	47	Egeria, 1851	C.	34.79	36.03	37.04	37.94	38.97	23 36.99	0.11	63.68	4 22 33.20	10.09	
	48		D.	59.09	1.96	3.05	4.07	5.20						
	49		B.	25.57	26.53	27.43	28.51	31.80						
	50	Anonymous, +29° 0′	C.	51.50	52.52	53.41	54.52	55.51	23 53.63	— 0.11	—63.68	4 22 49.84	— 10.09	
	51		D.	15.67	18.78	19.92	20.97	21.84						

11. Faint, tremulous, and blurred.
20. All three sets were recorded 1s. greater.
25. Blurred.
28. Dec. must be wrong. Probably half a degree too great.
32. Fine observation.
Dec. 27. 4h. Image coincident with wire.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m.	n.	c.
h.	s.	s.	s.	s.	s.
Dec. 27, 2.4	— 63.57	— 0.057	— 0.030	— 0.035	— 0.043

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s	s	m. s.	m. s.	s.	h. m. s.	s.	
	1		B.	40.94	41.82	42.70	43.61	46.46						
Dec. 27	2	α Tauri	C.	4.41	5.53	6.52	7.47	8.26	29 6.46	— 0.10	—63.69	4 28 2.67	— 9.24	N
	3		D.	26.47	29.35	30.30	31.11	31.98						
	4	B. Z., 393.104	B.	- -	7.19	8.18	9.08	11.86	34 9.08	+ 23.43	63.69	4 33 28.82	9.66	
	5	B. Z., 393.103	C.	- -	13.16	14.63	15.65	16.49	34 14.98	— 0.59	63.69	4 33 10.70	9.66	
	6	B. Z., 393.105	C.	31.64	32.67	33.64	35.62	36.53	34 34.02	0.10	63.69	4 33 30.23	9.66	
	†7		B.	42.61	43.74	44.70	45.59	48.61						
	8	Uranus	C.	7.32	8.36	9.32	10.29	11.21	49 9.33	0.10	63.71	4 48 5.52	- -	
	†9		D.	30.07	33.16	34.07	34.97	35.87						
	10		B.	42.08	43.07	43.81	44.89	47.79						
28	†11	Venus, 1st Limb	C.	5.81	6.64	7.57	8.57	9.33	47 7.56	— 0.07	64.40	21 46 4.11	- -	
	12		D.	27.33	30.19	31.25	32.11	32.97						
	13		B.	55.17	56.06	56.92	57.86	0.57						
	14	Weisse, 196	C.	17.87	18.94	19.78	20.67	21.53	13 19.79	+ 0.04	64.49	0 12 15.35	7.11	Y.
	15		D.	38.87	41.76	42.73	43.66	44.53						
	16		C.	8.13	9.12	9.97	10.88	11.68						
	17	Weisse, 212	D.	29.18	31.88	32.91	33.79	34.63	14 32.44	— 22.38	64.49	0 13 5.57	7.11	
	18		E.	51.99	52.89	55 67	56.61	57.35						
	19		B.	40.57	41.43	42.42	43.26	46.11						
	20	12 Ceti	C.	3.56	4.47	5.25	6.21	6.96	24 5.27	+ 0.05	64.48	0 23 0.83	7.14	
	21		D.	24.58	27.21	28.18	28.97	29 91						
	22	B. A. C., 240	C.	10.00	40.50	10.00	41.50	9.50	48 10.30	— 4.05	64.48	0 47 1.76	32.77	
	23	Polaris	A.	1.00	40.00	17.00	4.00	46.00	47 22.80	- -	- -	- - - -	- -	
	24		B.	33.00	8.00	44.00	23.00	12.00						
	25		B.	27.60	28.43	29.31	30.15	32.95						
	26	38 Ceti	C.	50.31	51.18	52.10	52.99	53.80	8 52.13	+ 0.04	64.48	1 7 47.69	7.40	
	27		D.	11.48	14.04	14.93	15.90	16.73						
	28		B.	31.52	32.42	33.24	34.13	36.93						
	29	Weisse, 206	C.	54.27	55.12	55.94	56.93	57.74	14 56.09	0.04	64.48	1 13 51.66	7.42	
	30		D.	15.37	18.12	19.03	19.92	20.72						
	31	Weisse, 336	B.	11.53	12.37	13.22	14.11	16.74	21 36.22	0.03	64.48	1 20 31.77	7.65	
	32		D.	55.72	58.21	59.13	0.11	1.07						
	33		B.	42.50	43.43	44.25	45.16	47.93						
	34	Weisse, 382	C.	5.58	6.45	7.33	8.37	9.17	24 7.46	0.02	64.48	1 23 3.01	7.72	
	35		D.	26.95	29.91	30.72	31.67	32.51						
	36		B.	31.40	32.42	33.37	34.28	37.09						
	37	Weisse, 539	C.	54.83	55.81	56.56	57.62	58.46	32 56.65	0.02	64.48	1 31 52.19	7.82	
	38		D.	16.22	19.10	19.94	20.86	21.74						
	39		B.	33.48	34.33	35.31	36.20	39.07						
	†40	Weisse, 646	C.	56.84	57.69	58.51	59.44	0.47	36 58.63	0.02	64.48	1 35 54.17	7.87	
	41		D.	18.35	21.05	21.91	22.88	23.89						
	42		B.	41.20	42.17	43.19	44.08	46.89						
	43	β Arietis	C.	5.41	6.37	7.31	8.31	9.12	48 7.33	0.01	64.47	1 47 2.87	8.19	
	44		D.	27.53	30.56	31.71	32.65	33.53						
	45		B.	58.15	59.08	0.04	0.88	3.66						
	46	B. A. C., 687	C.	20.80	21.81	22.75	23.78	24.64	7 22.81	+ 0.03	64.47	2 6 18.37	7.88	
	47		D.	41.91	44.77	45.73	46.67	47.51						
	48		C.	42.41	43.36	44.27	45.11	46.02						
	49	Weisse, 144	D.	3.91	6.76	7.74	8.64	9.51	12 7.25	— 22.95	64.47	2 10 39.83	8.17	
	50		E.	27.39	28.18	30.99	31.81	32.68						
	51		B.	30.81	31.72	32.68	33.53	36.32						
	52	ξ^2 Ceti	C.	53.63	54.64	55.52	56.49	57.31	21 55.59	+ 0.03	—64.47	2 20 51.15	— 8.08	
	53		D.	14.96	17.67	18.70	19.56	20.33						

11. Correction for semi-diameter, +1.02 s.
40. Several small stars in the field.
Azimuth cor., 28th, from Polaris and 12 Ceti.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m.	n.	c.
h.	s.	s	s.	s.	s.
Dec. 27, 2.4	— 63.57	— 0.057	— 0.030	— 0.035	— 0.043
28, 1.8	— 64.47	+ 0.007	+ 0.083	— 0.079	— 0.043

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
	1		B.	50.67	51.73	52.72	53.56	56.11						
Dec. 28	2	γ Ceti	C.	13.55	14.45	15.38	16.28	17.07	37 15.39	+ 0.04	−64.47	2 36 10.96	— 7.98	Y.
	3		D.	34.49	37.46	38.34	39.15	39.91						
	4		B.	14.85	15.84	16 75	17.76	20.41						
	5	✡ (8. 9) +14° 34′	C.	38.55	39.46	40.41	41.29	42.11	50 40.35	0.02	64.47	2 49 35.90	8.55	
	6		D.	0.22	3.13	3.98	4.78	5.67						
	7		B.	23.28	24.11	25.00	25.85	28.63						
	8	Weisse, 35	C.	46.20	47.11	47.98	48.86	49.67	4 47.97	0.03	64.47	3 3 43.54	8.37	
	9		D.	7.37	10.08	10.99	11.81	12.67						
	10		B.	41.54	42.51	43.43	44.49	47.43						
	11	B. Z., 530, +23° 50′	C.	6.50	7.49	8.49	9.47	10.38	9 8.46	+ 0.01	64.47	3 8 4.00	9.11	
	12		D.	29.43	32.46	33.49	34.40	35.40						
	†13	B. A. C., 1061	C.	38.00	54.00	6.50	21.50	35.50	23 7.10	— 1.76	64.46	3 22 0.87	57.74	
	14		C.	59.98	0.88	1.97	2.97	3.86						
29	†15	α Scorpii	D.	23.31	26.37	27.38	28.37	29.47	22 26.94	— 24.93	64.95	16 20 57.06	- -	N.
	16		E.	48.67	49.83	52.72	53.61	54.66						
	17		B.	11.48	12.53	13.41	14.27	17.31						
	†18	Mercury	C.	36.47	37.61	38.80	39.58	40.37	8 38.57	+ 0.02	64.94	18 7 33.65	- -	
	19		D.	59.77	2.79	3.80	4.71	5.67						
	20		C.	21.84	22.80	23.82	24.81	25.63						
30	21	Sun's 1st Limb	D.	44.51	47.64	48.71	49.67	50.51	39 48.21	— 24.43	64.93	18 38 18.85	- -	
	22		E.	9.41	10.59	13.55	14.33	15.27						
	23		B.	19.09	20.11	21.18	22.09	24.79						
	24	Sun's 2d Limb	C.	43.91	44.87	45.81	46.82	47.77	41 45.88	+ 0.02	64.93	18 40 40.97	- -	
	25		D.	6.86	9.77	10.77	11.71	12.69						
	26		B.	42.69	43.55	44.47	45.31	47.98						
	27	α Aquilæ	C.	5.75	6.60	7.43	8.21	9.12	45 7.44	— 0.01	64.93	19 44 2.50	5.53	
	28		D.	26.69	29.61	30.53	31.41	32.31						
	29		B.	26.38	27.47	28.41	29.31	32.08						
	†30	Venus, 1st Limb	C.	49.92	50.91	51.83	52.78	53.61	53 51.83	0.01	64.91	21 52 47.98	- -	
	31		D.	11.49	14.36	15.41	16.38	17.17						
	32		B.	22.20	23.03	23.90	24.81	27.62						
	33	α Aquarii	C.	44.89	45.74	46.67	47.53	48.39	59 46.69	0.00	64.91	21 58 41.78	6.38	
	34		D.	5.88	8.59	9.55	10.36	11.19						
	35		B.	1.40	2.37	3.29	4.10	6.82						
	36	Neptune	C.	24.19	25.15	25.98	26.91	27.81	59 26.04	0.00	64.90	23 58 21.14	- -	
	37		D.	45.33	48.08	48.91	49.77	50.55						
	38		B.	40.91	41.85	42.85	43.70	46.29						
	39	Rumker, 11970	C.	3.87	4.71	5.58	6.45	7.44	1 5.66	— 0.01	64.90	0 0 0.75	7.01	
	40		D.	25.00	27.76	28.71	29.50	30.27						
	41		B.	25.09	26.09	27.10	28.08	31.22						
	42	Lacaille, 121	C.	50.53	51.57	52.51	53.57	54.38	26 52.49	+ 0.02	64.90	0 25 47.61	7.00	
	43		D.	13.88	16.92	17.82	18.83	19.77						
	44	Weisse, 476	C.	26.44	27.39	28.17	29.11	29.91	29 28.20	— 0.01	64.90	0 28 23.29	7.23	
	45		B.	19.60	20.48	21.51	22.49	25.29						
	46	β Ceti	C.	43.57	44.57	45.62	46.51	47.37	37 45.55	+ 0.01	64.90	0 36 40.66	7.10	
	47		D.	5.87	8.61	9.61	10.67	11.51						
	48		B.	50.52	51.47	52.37	53.41	56.52						
	49	Lacaille, 218	C.	15.21	16.15	17.04	17.99	18.93	42 17.09	— 0.02	64.90	0 41 12.17	7.03	
	50		D.	37.87	40.67	41.78	42.83	43.62						
	51	Lacaille, 319	C.	29.89	31.00	31.94	33.05	33.94	4 31.96	+ 0.02	−64.89	1 3 27.09	— 6.98	

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate	*m.*	*n.*	*c.*
h.	s.	s	s.	s.	s.
Dec. 30, 0.0	— 64.90	+ 0.007	+ 0.040	— 0.056	— 0.043

13. Clouds over.
15. First two wires of E. doubtful, owing to clouds.
18. Faint and tremulous.

30. Correction for semi-diameter, +1.05 s.
Dec 30. The azimuth from Polaris.

Dec. 28. 3*h.* 45*m.* Image west 0.02 r. Clamp west.

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s	m. s.	m s	s.	h. m. s	s.	
	1		B.	28.06	28.83	29.69	30.62	33.39						
Dec. 30	†2	38 Ceti - - - - - -	C.	50.71	51.63	52.54	53.43	54.31	8 52.55	0.00	—64.89	1 7 47.66	— 7.38	N.
	3		D.	11.76	14.53	15.43	16.27	17.08						
	4		B.	28.00	3.50	42.00	19.50	9.00						
	5	Polaris - - - - -	D.	57.50	51.00	27.00	2.00	36.00	10 3.55	— 3.96	64.89	1 8 54.70	- -	
	6		B	45.52	46.39	47.30	48.23	50.92						
	7	Weisse, 138 - - -	C.	8.21	9.11	10.05	10.97	11.87	11 10.10	0.00	64.89	1 10 5.21	7.45	
	8		D.	29.37	32.08	33.04	33.86	34.61						
	9		B.	31.77	32.87	33.67	34.58	37.27						
	10	Weisse, 206 - - -	C.	54.60	55.61	56.42	57.31	58.12	14 56.46	0.00	64.89	1 13 51.57	7.41	
	11		D.	15.68	18.43	19.37	20.17	21.08						
	12		B.	48.73	49.71	50.70	51.57	54.32						
	13	θ^1 Ceti - - - - -	C.	11.87	12.87	13.76	14.63	15.52	18 13.72	+ 0.01	64.89	1 17 8.84	7.28	
	14		D.	33.11	35.93	36.85	37.68	38.57						
	15	Weisse, 598 - - -	C.	3.51	4.30	5.21	6.10	7.00	35 5.22	+ 0.01	64.89	1 34 0.34	7.78	
	16		D.	- -	28.63	29.67	30.66	31.41						
	17	Weisse, 600 - - -	E.	48.87	49.87	52.70	53.56	54.37	35 40.98	— 34.51	64.89	1 34 1.58	7.78	
	18		C.	11.08	12.11	12.84	13.71	14.47						
	19	o Piscium - - - -	D.	32.18	34.99	35.87	36.73	37.59	39 35.46	— 22.66	64.89	1 38 7.91	7.80	
	20		E	55.26	56.04	58.86	59.64	0.47						
	21		B.	51.75	52.81	53.83	54.82	57.79						
	22	Lacaille, 527 - - -	C.	17.48	18.31	19.19	20.37	21.26	43 19.38	+ 0.02	64.89	1 42 14.51	6.98	
	23		D.	40.94	44.12	45.09	45.99	46.99						
	24	47 Cassiopeæ - - - -	C	26.46	30.79	34.29	37.97	41.86	52 34.27	— 0.36	64.89	1 51 29.02	15.34	
	25	54 Cassiopeæ - - - -	C.	19.88	22.71	25.26	28.21	30.61	58 25.33	— 0.26	64.89	1 57 20.18	13.22	
	26		B.	8.15	9.27	10.16	11.17	14.41						
	27	Lacaille, 649 - - -	C.	34.20	35.17	36.16	37.24	38.09	5 36.22	+ 0.02	64.89	2 4 31.35	6.92	
	28		D.	58.15	1.37	2.42	3.20	4.17						
	29		B.	47.86	48.70	49.59	50.53	53.21						
	30	67 Ceti - - - - - -	C.	10.82	11.67	12.51	13.52	14.37	11 12.57	0.00	64.89	2 10 7.68	7.56	
	31		D.	31.82	34.70	35.55	36.43	37.30						
	32	Carrington, 347 - -	C	10.00	43.00	16.00	48.00	19.00	22 15.10	— 3.66	64.88	2 21 6.56	93.90	
	33	B. A. C., 814 - - -	C.	2.99	5.91	8.33	10.46	12.62	34 8.06	0.21	64.88	2 33 2.97	13.56	
	34		B.	51.20	52.11	52.91	53.79	56.57						
	35	γ Ceti - - - - - -	C	13.92	14.82	15.67	16.60	17.41	37 15.78	0.00	64.88	2 36 10.90	7.96	
	36		D.	34.96	37.91	38.80	39.63	40.42						
	37	16 Persei - - - - -	C.	57.61	58.91	59.85	0.85	1.97	42 59.84	— 0.06	64.88	2 41 54.90	9.74	
	38		B.	16.95	17.97	19.04	19.91	22.61						
	39	γ^1 Eridani - - - - -	C.	40.61	41.57	42.41	43.28	44.21	52 42.41	+ 0.01	64.87	3 51 37.55	7.61	
	40		D.	2.16	4.92	5.91	6.83	7.77						
	41		B.	14.83	15.87	16.78	17.73	20.77						
	42	ε Tauri - - - - -	C.	38.81	39.83	40.82	41.73	42.67	21 40.86	— 0.03	64.87	4 20 35.96	9.39	
	43		D.	1.11	4.16	5.08	5.93	6.72						
	44		B.	41.87	42.81	43.75	44.64	47.55						
	45	α Tauri - - - - -	C.	5.67	6.63	7.51	8.41	9.27	29 7.50	0.02	64.87	4 28 2.61	9.24	
	46		D.	27.40	30.33	31.27	32.22	33.13						
	47		B.	49.63	50.57	51.48	52.37	54.99						
	48	Weisse, 732 - - -	C.	12.52	13.41	14.37	15.22	16.06	35 14.30	0.00	64.87	4 34 9.43	— 8.57	
	49		D.	33.51	36.27	37.17	38.06	38.84						
	50		B.	14.67	15.70	16.56	17.62	20.67						
	51	Uranus - - - - - -	C.	39.40	40.45	41.33	42.27	43.17	48 41.34	— 0.03	— 64.86	4 47 36.45	- -	
	52		D.	2.13	5.14	6.07	7.03	7.87						

2. The seconds of transit are doubtful.

Dec. 30. 5h. 0m. { Image east r. 0.01. Clamp west. Image west 0.06. Clamp east.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m.	n.	c.
h.	s.	s.	s.	s.	s.
Dec. 30, 0.0	— 64.90	+ 0.007	+ 0.040	— 0.056	— 0.043

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DATE.	Number.	OBJECT.	Set.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.	Observer.
1861.				s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.	
	1		C.	0.09	1.06	1.93	3.09	4.13						
Dec. 30	2	α Scorpii	D.	23.36	26.57	27.61	28.57	29.50	22 27.08	— 24.93	- -	- - - -	- -	N.
	3		E.	48.83	49.82	52.76	53.91	54.91						
31	4	B. A. C., 240	C.	5.00	36.00	3.00	36.00	3.00	48 4.60	+ 0.99	—64.73	0 47 0.86	— 30.85	Y.
	5		A.	54.00	31.00	8.00	57.00	35.00						
	6	Polaris	B.	25.00	1.00	38.00	16.00	4.00	54 49.73	- -	- -	- - - -	- -	
	7		C.	47.00	26.00	58.00	37.00	9.00						
	8		B.	48.81	49.68	50.56	51.47	54.22						
	9	θ^1 Ceti	C.	11.82	12.89	13.67	14.65	15.49	18 13.68	— 0.13	64.72	1 17 8.82	7.29	
	10		D	33.12	35.79	36.76	37.68	38.55						
	11		C.	11.27	12.27	13.13	13.96	14.82						
	†12	Weisse, 441	D.	32.55	35.23	36.17	37.00	37.86	27 35.63	22.55	64.72	1 26 8.37	7.47	
	13		E.	55.21	56.19	58.68	59.61	0.57						
	14	♀ (9) +1° 52′	D.	33.71	36.41	37.37	38.31	39.22	31 37.00	22.55	64.72	1 30 9.74	7.58	
	15		B.	54.21	55.21	56.13	56.99	59.73						
	16	Santini, 91	C.	17.07	18.00	18.88	19.75	20.57	32 18.89	0.12	64.72	1 31 14.05	7.58	
	17		D.	38.06	40.83	41.82	42.58	43.46						
	18		B.	18.50	19.48	20.47	21.37	24.08						
	19	Weisse, 773	C	41.46	42.32	43.17	44.08	44.95	44 43.22	0.12	64.71	1 43 38.39	7.55	
	20		D.	2.36	5.19	6.11	6.99	7.81						
	21		B.	58.94	59.80	0.71	1.57	4.33						
	22	Weisse, 978	C.	21.93	22.84	23.69	24.58	25.41	56 23.68	0.11	64.71	1 55 18.86	7.91	
	23		D	43.05	45.79	46.64	47.42	48.44						
	24		B.	12.87	13.83	14.82	15.74	18.55						
	25	19 Arietis	C.	36.57	37.47	38.38	39.26	40.08	6 38.35	0.10	64.70	2 5 33.55	8.19	
	26		D.	58.21	1.06	1.89	2.87	3.70						
	27		B.	47.66	48.62	49.57	50.50	53.21						
	28	67 Ceti	C.	10.72	11.60	12.56	13.37	14.25	11 12.51	0.13	64.70	2 10 7.68	7.57	
	29		D.	31.88	34.58	35.47	36.42	37.25						
	30		B.	31.21	32.02	32.90	33.83	36.62						
	31	ξ^2 Ceti	C.	54.18	55.03	55.96	56.85	57.68	21 55.96	0.11	64.70	2 20 51.16	8.08	
	32		D.	15.32	18.11	19.03	19.91	20.78						
	33		B.	56.79	58.20	59.71	1.29	5.67						
	34	τ Persei	C.	33.91	35.43	36.83	38.37	39.74	45 36.92	0.05	64.69	2 44 32.18	11.04	
	35		D.	8.25	12.76	14.24	15.65	16.95						
	36		B.	19.93	20.87	21.81	22.72	25.62						
	37	ρ^3 Arietis	C.	43.75	44.72	45.63	46.55	47.42	49 45.67	0.10	64.69	2 48 40.89	8.70	
	38		D.	5.79	8.72	9.67	10.49	11.37						
	39		B.	16.00	17.26	18.81	20.44	24.93						
	40	ν Persei	C.	53.77	55.22	56.64	58.24	59.61	55 56.74	0.04	64.68	2 54 52.01	11.37	
	41		D.	28.56	33.22	34.75	36.13	37.52						
	42		B.	46.99	48.19	49.34	50.49	54.13						
	43	β Persei	C.	16.84	18.01	19.17	20.43	21.41	0 19.22	0.07	64.68	2 59 14.47	10.14	
	44		D.	44.34	48.02	49.13	50.37	51.44						
	45		B.	25.27	26.31	27.26	28.11	31.05						
	46	δ Arietis	C.	49.45	50.48	51.38	52.27	53.15	4 51.39	— 0.09	64.68	3 3 46.61	8.89	
	47		D.	11.61	14.58	15.54	16.48	17.41						
	48		A.	5.50	18.50	32.00	13.00	25.50						
	49	B. A. C., 1061	B.	52.00	5.50	19.00	33.00	14.50	17 23.77	+5 39.71	64.67	3 22 58.80	— 57.30	
	50		C.	36.50	50.50	3.50	17.50	30.00						
	51	B. A. C., 5140, S. P.	D.	14.00	51.00	28.00	4.50	55.50	33 18.60	—9 34.13	64.67	15 22 39.80	+ 77.66	
	52	B. A. C., 1164	C.	14.17	15.21	16.12	17.13	17.94	40 16.11	0.09	64.67	3 39 11.35	— 9.41	
	53		B.	57.36	58.31	59.28	0.27	3.30						
	54	η Tauri	C.	22.32	23.21	24.21	25.08	25.95	40 24.18	— 0.09	—64.67	3 40 19.42	— 9.41	
	55		D.	45.17	48.11	49.10	50.03	50.96						

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m.	n.	c.
h.	s.	s.	s.	s.	s.
Dec. 31, 2.5	— 64.69	+ 0.022	— 0.075	+ 0.077	— 0.043

12. Dim.

r.

Dec. 31. 3h. 45m { Image west 0.02. Clamp west. Image west 0.07. Clamp east.

Dec. 31. Azimuth cor. from Polaris and θ^1 Ceti.

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OBSERVATIONS

WITH THE

MURAL CIRCLE,

1861.

Hosted by Google

DATE.	Number.	OBJECT.	No. of mic. readings.	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Correct'd.	Barometer.
1861.				° ′ ″	″	″	″	″	″	″	r.	r.	in.
Jan. 4	1	ρ Persei	3	30 34 61.5	54.6	58.5	66.7	61.5	60.0	60.47	30.1787	.1736	30.142
	2	Bessel Zone, 448, 4	4	30 24 61.5	53.6	57.1	66.1	60.6	58.8	59.62	29.1330	.1193	30.148
	3	Bessel Zone, 508, 94	5	31 19 61.5	52.6	57.6	65.4	59.5	58.6	59.20	30.6052	.5939	30.148
	4	Anonymous, 3h. 23m.	1	31 54 61.5	54.2	57.7	65.6	59.1	58.3	59.40	32.4090	.4062	- -
	5	Bessel Zone, 402, 10	4	34 14 61.5	53.9	58.5	66.9	59.4	59.5	59.95	32.5883	.5757	30.162
	6	Nadir	10	209 59 61.5	53.2	57.0	66.6	57.4	61.1	59.47d	30.5860	.5845	
29	7	Bessel Zone, 448, 4	1	30 24 61.5	51.8	57.0	64.9	58.7	60.0	58.98	29.1380	.1316	- -
	8	Bessel Zone, 448, 5	1	- - -	- -	- -	- -	- -	- -	- -	28.8570	.8580	29.764
	9	Bessel Zone, 508, 94	4	31 19 61.5	51.1	56.7	64.5	58.0	59.5	58.55	30.6272	.6140	29.762
	10	Bessel Zone, 508, 101	2	31 54 61.5	52.5	57.7	64.7	58.1	59.5	59.00	32.1060	.1001	- -
	11	Bessel Zone, 402, 13	2	34 39 61.5	52.6	57.6	65.3	57.5	58.6	58.85	28.3395	.3323	29.764
	12	Nadir	10	209 59 61.5	51.4	57.4	64.4	57.3	61.1	58.85d	30.6044	.6030	
Feb. 25	13	ζ Tauri	3	47 49 61.5	58.6	57.5	66.1	60.0	62.6	61.05	30.6290	.6264	30.300
	14	136 Tauri	3	41 19 61.0	60.9	59.0	66.0	60.0	63.5	61.73	31.7557	.7540	30.300
	15	1 Geminorum	3	45 34 60.0	58.7	57.3	63.9	57.5	60.3	59.62	28.4243	.4142	30.300
	16	Nadir	10	209 59 59.8	58.5	55.2	64.2	55.0	63.6	59.38d	30.5850	.5834	
27	17	η Tauri	3	46 54 59.7	55.3	53.1	57.5	58.4	62.4	57.73	29.3377	.3271	30.260
	18	ζ Tauri	4	47 49 61.5	56.7	55.5	60.3	60.9	64.8	59.95	30.6000	.5925	30.260
	19	129 Tauri	2	53 9 61.5	57.7	56.1	60.6	59.9	65.6	60.23	33.1890	.1852	30.264
	20	136 Tauri	3	41 19 61.5	59.1	56.1	61.4	60.4	66.6	60.85	31.7470	.7452	30.264
	21	1 Geminorum	4	45 34 61.5	57.8	56.3	60.7	60.1	64.8	60.20	28.4310	.4214	30.264
	22	Nadir	10	209 59 61.5	57.0	53.5	60.3	57.0	68.5	59.63d	30.6112	.6099	
	23	ω Geminorum	5	44 29 61.5	58.0	56.2	61.0	59.1	65.5	60.22	31.7888	.7838	30.260
	24	τ Geminorum	5	38 24 61.5	57.2	56.9	60.6	59.8	66.4	60.40	30.3264	.3160	30.260
	25	δ Geminorum	5	46 39 61.5	56.7	54.9	60.1	58.8	65.3	59.55	31.3110	.3030	30.260
	26	ι Geminorum	3	40 49 61.5	56.9	54.7	61.6	58.4	67.2	60.05	31.3737	.3685	30.264
	27	a^2 Geminorum	5	36 39 61.5	56.9	55.0	59.5	57.7	63.5	59.02	28.5600	.5502	30.264
March 11	28	1 Geminorum	3	45 34 60.0	60.2	57.6	64.4	59.8	62.0	60.67	28.4413	.4368	30.264
	29	η Geminorum	3	46 24 60.0	59.4	56.3	64.4	59.6	62.3	60.33	34.7327	.7312	30.264
	30	Nadir	10	209 59 60.0	56.8	54.6	63.1	54.4	64.4	58.88d	30.5856	.5840	- -
	31	ζ Geminorum	3	48 4 60.0	57.4	55.9	65.1	57.6	63.3	59.88	28.6157	.6080	30.256
	32	τ Geminorum	2	38 24 60.0	57.8	57.0	65.1	56.8	63.3	60.00	30.3150	.3084	30.256
	33	δ Geminorum	3	46 39 60.0	56.9	55.1	64.2	56.3	60.9	58.90	31.2850	.2805	30.256
22	34	ω Geminorum	5	44 29 60.0	57.4	55.0	61.8	57.3	61.3	58.80	31.7590	.7537	30.010
	35	τ Geminorum	5	38 24 61.0	58.0	57.5	62.9	59 4	64.9	60.62	30.3292	.3188	30.010
	36	δ Geminorum	5	46 39 61.0	57.7	56.1	63.2	59.2	63.6	60.13	31.3162	.3082	30.008
	37	a^2 Geminorum	4	36 39 61.0	57.4	55.7	62.6	58.1	61.4	59.37	28.5728	.5631	30.014
	38	Nadir	10	209 59 61.0	58.4	55.3	63.7	56.4	65.7	60.08d	30.6167	.6155	
	39	λ Cancri	3	44 24 61.0	58.3	56.4	63.0	58.3	63.0	60.00	29.6153	.6122	30.018
	40	θ Cancri	5	50 19 61.0	58.0	56.8	64.1	58.7	65.5	60.68	30.9260	.9224	30.018
July 3	41	Nadir	5	209 59 71.9	63.4	73.9	76.4	58.2	75.0	69.80	30.5798	.5788	
	42	Comet 1861, II, S. P.	5	315 30 17.9	7.0	11.2	19.5	4.2	20.0	13.30	30.0878	.1172	30.184
Sept. 2	43	Nadir, 18h.	5	359 59 62.5	59.5	63.0	57.8	60.0	63.2	61.00d	30.2431	.2414	
	44	δ Ursæ Minoris	5	132 14 63.4	61.0	61.4	58.2	60.1	66.9	61.83d	27.1806	.1767	30.198
	45	α Lyræ	5	180 14 59.8	56.6	60.2	54.7	56.8	61.9	58.33	31.2030	.1907	- -
	46	Nadir, 19h. 30m	5	359 59 61.8	59.2	63.1	57.3	59.1	62.1	60.44d	30.2338	.2321	
	47	Arg., 20055	5	236 39 62.8	58.0	62.8	58.1	59.6	66.8	61.35	31.8520	.8571	30.204
	48	Arg., 20217	5	235 39 62.1	57.4	63.5	58.0	58.0	66.2	60.87	32.2608	.2622	- -
	49	Anon., (20h. 5m. 48s)	5	234 39 63.4	58.9	63.8	58.1	57.8	67.0	61.50	28.0842	.0869	- -
	50	Arg, 20337	2	- - - -	- -	- -	- -	- -	- -	- -	32.9180	.9234	30.212
4	51	Sun, N. L.	3	211 34 58.3	55.5	57.4	53.7	55.3	61.8	57.00	29.6373	.6287	- -
	52	Sun, S L.	3	212 9 55.0	50.8	53.0	49.0	51.5	56.9	52.70	32.6860	.6942	30.166
	53	Nadir, 11h.	5	359 59 55.6	52.3	55.8	49.7	54.1	55.4	53.82d	30.1211	.1201	

PIER THERMOMETERS.

Refer'e No.	U.	L.	N.	S.	In.	Refer'e No.	U.	L.	N.	S.	In.
	°	°	°	°	°		°	°	°	°	°
6	38.0	37.5	- -	- -	33.4	22	52.8	50.6	- -	- -	45.6
12	43.3	43.3	- -	- -	39.5	30	41.7	44.8	- -	- -	44.9
16	47.2	46.0	- -	- -	45.2	38	45.2	44.8	- -	- -	41.8

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Number.	THERM'S. At.	THERM'S. Ex.	Mic. zero.	CORRECTIONS FOR— Micrometer.	CORRECTIONS FOR— Object.	Corrected Reading	Observed Declination.	Reduct'n to 1860.0.	Observer.	REMARKS.
	°	°	r.	′ ″	′ ″	° ′ ″	° ′ ″	″		
1	35.9	33.5	30.5930	+ 26.36	+ 0.62	30 35 27.45	+38 18 11.80	— 30.69	L.	
2	36.0	33.3	- - -	+ 1 32.63	0.46	30 26 32.71	38 27 6.54	29.93		
3	36.0	33.4	- - -	— 0.06	1.41	31 20 0.55	37 33 38.70	28.14		
4	- -	- -	- - -	1 53.97	2.00	31 53 7.43	37 0 31.82	27.56		
5	35.8	32.2	- - -	— 2 4.62	4.48	34 12 59.81	34 40 39.44	24.74		
6										
7	- -	- -	30.6213	+ 1 33.63	0.46	30 26 33.07	38 27 6.18	30.30		
8	41.8	39.3	- - -	1 50.83	0.46	30 26 50.27	38 26 48.98	30.27		
9	41.7	38.0	- - -	+ 0.46	1.38	31 20 0.39	37 33 38.86	28.72		
10	- -	- -	- - -	— 1 32.35	1.96	31 53 28.61	37 0 10.64	28.11		
11	41.6	37.5	- - -	+ 2 23.87	4.89	34 42 27.61	34 11 11.64	25.16		
12										
13	42.3	35.4	30.5932	— 2.09	19.51	47 50 18.47	21 3 20.78	7.24		
14	41.8	35.0	- - -	— 1 12.96	12.15	41 19 0.92	27 34 38.33	7.35		
15	41.6	35.0	- - -	+ 2 16.96	16.98	45 37 33.56	23 16 5.69	4.32		
16										
17	50.7	52.8	30.6158	1 21.00	17.81	46 56 36.54	21 57 2.71	9.95		
18	51.6	53.5	- - -	+ 1.47	18.78	47 50 20.20	21 3 19.05	7.21		
19	51.8	51.5	- - -	— 2 41.49	25.03	53 7 43.77	15 45 55.48	4.11		
20	51.8	51.5	- - -	— 1 10.98	11.73	41 19 1.60	27 34 37.65	7.34		
21	51.9	51.0	- - -	+ 2 17.93	16.48	45 37 34.61	23 16 4.64	— 4.31		
22										
23	51.2	47.0	- - -	— 1 13.41	15.27	44 29 2.08	24 24 37.17	+ 3.89		
24	50.7	46.7	- - -	+ 18.91	8.76	38 25 28.07	30 28 11.18	3.36		
25	50.4	45.5	- - -	— 43.13	17.75	46 39 34.17	22 14 5.08	7.21		
26	49.8	45.0	- - -	— 47.25	11.35	40 49 24.15	28 4 15.10	6.35		
27	49.7	45.0	- - -	+ 2 9.83	6.98	36 42 15.83	32 11 23.42	+ 6.53		
28	44.4	34.0	30.6018	+ 2 16.08	16.99	45 37 33.74	23 16 5.51	— 4.32		
29	44.0	33.5	- - -	— 4 19.53	17.83	46 20 58.63	22 32 40.62	— 2.58		
30										
31	42.5	32.5	- - -	+ 2 5.33	19.93	48 7 25.14	20 46 14.11	+ 5.05		
32	42.0	32.4	- - -	+ 18.46	9.02	38 25 27.48	30 28 11.77	2.81		
33	41.7	32.2	- - -	— 42.64	18.24	46 39 34.50	22 14 4.75	6.91		
34	45.6	42.0	30.6142	— 1 11.62	15.30	44 29 2.48	24 24 36.77	3.46		
35	45.7	42.4	- - -	+ 18.56	8.66	38 25 27.84	30 28 11.41	2.53		
36	45.5	40.6	- - -	— 43.63	17.78	46 39 34.28	22 14 4.97	6.77		
37	45.0	40.3	- - -	+ 2 8.91	6.99	36 42 15.27	32 11 23.98	5.33		
38										
39	43.4	36.6	- - -	+ 1 2.97	15.43	44 26 18.40	24 27 20.85	14.53		
40	43.2	36.2	- - -	— 19.38	+ 22.22	50 20 3.52	18 33 35.73	+ 17.91		
41										
42	67.5	60.4	30.4229	+ 19.28	— 2 37.60	315 27 54.98	66 34 15.73	- -	H.	Parallax, +46″.07, computed from sufficiently accurate parabolic elements.
43										
44	73.7	71.5	30.2253	+ 3 11.61	— 1 1.65	132 17 11.79	86 36 27.46	— 18.42		
45	- -	71.2	- - -	— 1 0.68	+ 0.24	180 13 57.89	+38 39 41.36	20.29		
46										
47	72.5	70.0	- - -	1 42.57	1 25.36	236 39 44.14	—17 46 4.89	19.54		
48	- -	69.6	- - -	— 2 8.03	1 22.26	235 39 15.10	16 45 35.85	21.81		
49	- -	- -	- - -	+ 2 14.41	1 19.57	234 43 35.48	15 49 56.23	23.50		
50	72.2	69.2	- - -	— 2 49.59	1 19.32	234 38 31.23	—15 44 51.98	— 23.69		
51	- -	- -	30.2185	+ 37.07	29.36	211 36 3.43 }	+ 7 1 43.99	- -	-	Observed semi-diameter, = 15′ 51″.83.
52	77.7	81.7	- - -	— 2 35.61	+ 30 00	212 7 47.09 }				
53										

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DATE.	Number.	OBJECT.	No. of mic. readings.	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Correct'd.	Barometer.
1861.				° ′ ″	″	″	″	″	″	″	r.	r.	in.
Sept. 6	1	Sun, S. L.	4	212 49 60.8	57.1	60.9	57.0	56.3	63.2	59.22	28.3280	.3197	- -
	2	Sun, N. L.	4	212 19 60.1	56.9	59.3	56.0	56.2	62.9	58.57	30.0650	.0753	29.970
	3	Nadir, 11h. 30m.	5	359 59 61.5	59.2	64.2	58.2	59.6	62.0	60.78d	30.2456	.2438	
	4	Nadir, 19h. 30m.	5	359 59 60.6	58.4	62.2	57.2	58.6	61.2	59.70d	30.2430	.2412	
	5	Arg., 20055	2	236 39 59.8	56.8	60.4	57.2	58.2	64.6	59.50	31.8840	.8900	29.952
	6	Arg., 20217	5	235 39 59.0	56.2	61.8	57.0	56.4	64.1	59.08	32.2130	.2157	- -
	7	Arg., 20337	5	234 39 58.3	55.0	59.0	54.7	54.1	61.7	57.13	32.8542	.8588	29.958
	8	Anon. (20h. 26m. 54s.)	5	218 54 57.7	53.6	57.9	54.5	55.5	61.8	56.83	28.2600	.2575	29.957
	9	1 Aquarii	5	- - - -	- -	- -	- -	- -	- -	- -	32.5138	.5116	- -
	10	Weisse XX, 924	5	- - - -	- -	- -	- -	- -	- -	- -	30.9372	.9378	- -
	11	Weisse XX, 1269	5	- - - -	- -	- -	- -	- -	- -	- -	28.7980	.7989	29.952
	12	61¹ Cygni	5	180 49 61.5	59.6	63.3	58.3	59.1	63.2	60.83	31.1280	.1168	- -
	13	61² Cygni	5	- - - -	- -	- -	- -	- -	- -	- -	31.0398	.0294	- -
	14	α Cephei	5	156 54 61.8	60.1	63.0	58.0	60.7	62.8	61.07	31.4420	.4153	29.958
	15	β Cephei	5	148 54 60.4	57.7	61.5	56.2	57.8	60.2	58.97	28.5934	.5569	29.956
	16	Nadir, 21h. 40m.	5	359 59 61.0	59.7	63.4	58.0	59.6	61.3	60.50d	30.2633	.2615	
	17	Nadir, 22h. 35m.	5	359 59 61.6	60.2	64.8	59.6	60.0	62.2	61.40d	30.2714	.2696	
	18	α Piscis Australis	5	249 14 60.1	55.0	61.5	58.2	56.3	63.0	59.02	32.8718	.8802	- -
	19	α Ursæ Majoris, S. P.	4	101 24 60.9	61.6	61.2	60.6	59.3	63.8	61.23	27.4555	.4712	29.962
7	20	Sun, N. L.	4	212 44 61.9	57.7	61.8	57.3	58.4	65.0	60.35	32.6125	.6023	30.070
	21	Sun, S. L.	4	213 14 61.3	56.8	61.1	56.0	57.9	63.7	59.47	30.8992	.9077	30.072
	22	Nadir, 11h. 20m.	5	359 59 61.1	58.4	62.5	57.0	59.5	61.6	60.02d	30.3412	.3404	
	23	Nadir, 17h. 50m.	5	359 59 59.8	55.6	60.2	54.0	57.5	60.2	57.88d	30.3683	.3666	
	24	μ¹ Sagittarii	5	239 59 60.1	54.8	59.9	56.1	57.9	64.5	58.88	32.7466	.7519	30.112
	25	δ Ursæ Minoris	5	132 14 59.3	56.3	58.5	53.6	57.3	61.7	57.78	27.2758	.2712	- -
	26	α Lyræ	5	180 14 59.5	57.1	60.6	54.4	57.2	61.4	58.37	31.3506	.3375	- -
	27	51 (Hev.) Cephei, S. P.	5	126 9 56.9	54.7	56.1	51.4	56.0	59.2	55.72	30.8494	.8520	30.126
9	28	Sun, S. L.	5	213 59 58.9	56.2	60.0	56.4	55.7	61.4	58.10	30.5830	.5734	- -
	29	Sun, N. L.	5	213 29 54.9	51.2	56.0	52.6	52.2	57.9	54.13	32.2754	.2842	30.312
	30	Nadir, 11h. 30m.	5	359 59 57.4	55.7	59.7	54.7	56.3	58.0	56.97d	30.3346	.3328	
10	31	Sun, N. L.	5	213 54 60.1	57.2	62.7	58.8	58.2	62.9	59.98	34.4838	.4776	30.312
	32	Sun, S. L.	5	214 24 59.3	56.2	61.6	58.0	56.0	60.8	58.65	32.7976	.8098	- -
	33	Nadir, 11h. 30m.	5	359 59 58.0	56.8	61.4	57.0	57.4	58.3	58.15d	30.3442	.3425	
	34	μ¹ Sagittarii	5	239 59 57.1	51.9	58.0	53.9	56.0	61.6	56.42	32.7138	.7188	30.200
	35	δ Ursæ Minoris	5	132 14 56.9	55.5	56.0	51.7	55.2	59.5	55.80	27.2442	.2391	- -
	36	α Lyræ	5	180 14 55.6	54.8	57.1	51.0	54.1	56.2	54.80	31.3130	.3000	- -
	37	51 (Hev.) Cephei, S. P.	1	126 9 55.5	55.1	55.1	50.3	55.1	57.6	54.78	30.8180	.8189	30.202
	38	Nadir, 18h. 45m.	5	359 59 56.2	54.6	57.8	51.7	55.1	56.3	55.28d	30.3139	.3121	
11	39	Sun, S. L.	5	214 39 58.9	55.5	58.0	53.9	54.1	60.7	56.85	25.2380	.2258	29.986
	40	Sun, N. L.	5	214 14 57.8	54.3	57.0	53.4	54.6	60.1	56.20	31.7634	.7731	- -
	41	Nadir, 11h. 40m.	5	359 59 56.4	54.8	57.1	51.5	55.1	56.4	55.22d	30.3037	.3021	
12	42	Sun, N. L.	5	214 34 52.3	49.6	51.1	48.8	49.2	54.2	50.87	28.8752	.8792	29.958
	43	Nadir, 11h. 45m.	5	359 59 51.4	50.2	52.8	48.0	51.3	51.5	50.87d	30.2340	.2323	
	44	Nadir	5	359 59 54.6	52.5	53.1	47.7	52.1	52.3	52.05	30.2508	.2484	
	45	Nadir	5	0 0 11.6	9.2	7.4	10.6	8.7	11.8	9.88	30.5487	.5468	
	46	Polaris, S. P.	5	127 29 53.2	51.4	49.9	47.4	51.0	56.4	51.55	31.0570	.0648	29.960
	47	υ Draconis	5	147 54 58.5	55.4	58.8	67.0	53.8	61.7	59.20	33.0342	.9969	30.003
	48	Nadir	5	359 59 67.3	66.1	69.4	65.1	64.4	67.2	66.58	30.5079	.5072	
19	49	Nadir, 1h. 0m.	5	359 59 54.8	53.9	58.0	52.9	53.6	53.7	54.48d	30.3036	.3018	- -
	50	Polaris	5	130 19 54.6	55.3	55.0	53.7	53.4	56.0	54.67	29.9200	.9160	30.028
20	51	Sun, S. L.	5	218 14 57.8	54.2	57.1	55.0	56.1	63.2	57.23	31.5548	.5520	30.025
	52	Nadir, 12h. 50m.	6	359 59 60.7	56.7	58.3	53.7	59.1	61.0	58.25	30.3428	.3412	
	53	Nadir, 21h. 25m.	5	359 59 60.9	57.9	60.3	54.6	58.3	60.4	58.73	30.3786	.3771	

PIER THERMOMETERS.

Refer'e No.	U.	L.	N.	S.	In.	Refer'e No.	U.	L.	N.	S.	In.
41	74°.8	74°.0	74°.9	73°.9	70°.9	52	76°.1	73°.8	75°.0	75°.5	69°.5
43	75.1	73.7	74.4	74.5	72.0	53	72.8	71.9	72.6	72.6	71.8
49	68.6	68.7	- -	- -	- -						

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Number.	THERM'S. At.	THERM'S. Ex.	Mic. zero.	CORRECTIONS FOR— Micrometer.	CORRECTIONS FOR— Object.	Corrected Reading.	Observed Declination.	Reduct'n to 1860.0.	Observer.	REMARKS.
	°	°	r.	′ ″	′ ″	° ′ ″	° ′ ″	″		
1	- -	- -	30.2314	+ 2 0.19	+ 31.05	212 52 30.46	+ 6 17 4.64	- -	H.	Observed semi-diameter, = 15′ 55″.84.
2	73.0	76.2	- - -	+ 9.81	30.39	212 20 38.77				
3										
4										
5	73.0	69.2	30.2495	— 1 43.11	1 24.78	236 39 41.17	—17 46 1.92	— 19.37	-	Observed through clouds.
6	- -	69.0	- - -	2 3.58	1 21.67	235 39 17.17	16 45 37.92	21.66		
7	72.5	69.0	- - -	— 2 44.00	1 18.68	234 38 31.81	15 44 52.56	23.62		
8	- -	68.9	- - -	+ 2 5.21	45.27	218 57 47.31	— 0 4 8.06	30.28		
9	- -	- -	- - -	— 2 22.18	45.15	218 53 19.80	+ 0 0 19.45	31.12		
10	- -	68.8	- - -	— 43.26	45.19	218 54 58.76	— 0 1 19.51	31.73		
11	72.0	68.6	- - -	+ 1 31.18	45.27	218 57 13.28	— 0 3 34.03	33.63		
12	- -	- -	- - -	— 54.51	0.80	180 49 7.12	+38 4 32.13	44.23		
13	- -	- -	- - -	49.02	+ 0.80	180 49 12.61	38 4 26.64	44.23		
14	72.0	68.1	- - -	— 1 13.28	— 23.94	156 53 23.85	62 0 15.40	39.63		
15	71.8	67.6	- - -	+ 1 46.39	— 33.81	148 56 11.55	+69 57 27.70	39.65		
16										
17										
18	- -	66.2	- - -	— 2 45.35	+ 2 27.09	249 14 40.76	—30 21 1.51	— 44.28		
19	70.3	66.0	- - -	+ 2 54.62	— 4 30.49	101 23 25.36	+62 29 46.11	+ 34.68		
20	74.2	80.0	30.3401	— 2 22.19	+ 30.72	212 43 8.88	+ 5 54 37.24	- -	-	Observed semi-diameter, = 15′ 53″.16.
21	- -	80.2	- - -	35.68	31.38	213 14 55.17				
22										
23										
24	76.0	73.1	30.4003	— 2 27.81	+ 1 36.23	239 59 7.30	—21 5 28.05	+ 0.42		
25	- -	72.5	- - -	+ 3 16.68	— 1 1.37	132 17 13.09	+86 36 26.16	— 18.97		
26	- -	- -	- - -	— 58.90	+ 0.24	180 13 59.71	38 39 39.54	— 20.85		
27	75.5	71.8	- - -	28.38	— 1 16.48	126 8 10.86	+87 14 31.61	+ 20.61		
28	- -	- -	30.3810	12.09	+ 33.09	214 0 19.10	5 9 16.24	- -	-	Observed semi-diameter, = 15′ 56″.09.
29	71.1	73.5	- - -	1 59.62	32.41	213 28 26.92				
30										
31	70.2	79.5	30.3719	4 18.06	32.48	213 51 14.40	+ 4 46 32.76	- -	-	Observed semi-diameter, = 15′ 52″.08.
32	- -	80.0	- - -	2 33.23	33.15	214 22 58.57				
33										
34	73.8	73.0	30.3872	— 2 26.55	+ 1 36.55	239 59 6.42	—21 5 27.17	+ 0.38		
35	- -	72.9	- - -	+ 3 17.87	— 1 1.50	132 17 12.17	+86 36 27.08	— 19.37		
36	- -	- -	- - -	— 57.37	+ 0.24	180 13 57.67	38 39 41.58	— 21.27		
37	73.5	72.4	- - -	— 27.13	— 1 16.60	126 8 11.05	87 14 31.80	+ 21.10	-	Lost in clouds.
38										
39	74.0	80.6	30.3782	+ 5 23.85	+ 33.19	214 45 53.89	4 23 41.78	- -	-	Observed semi-diameter, = 15′ 56″.42.
40	- -	79.7	- - -	— 1 27.67	32.52	214 14 1.05				
41										
42	74.1	75.0	30.3776	+ 1 34.18	+ 16 29.93	214 52 54.98	4 0 44.27	- -	He.	
43										
44										
45										
46	76.0	78.0	30.3890	— 42.48	— 1 11.66	127 27 57.41	88 34 18.16	— 31.02		
47	73.0	68.5	- - -	— 2 43.92	35.23	147 51 40.05	71 1 59.20	26.68		
48										
49	- -	- -	- - -	- - -	- - -	- - - -	- - - -	- -	H.	
50	68.5	63.5	30.3896	+ 29.77	1 6.71	130 19 17.73	88 34 21.52	— 33.77		
51	75.4	79.0	30.3690	— 1 14.35	— 15 20.66	217 58 22.22	+ 0 55 17.03	- -	He.	
52										
53										

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DATE.	Number.	OBJECT.	No. of mic. readings.	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Correct'd.	Barometer.
1861.				° ′ ″	″	″	″	″	″	″	r.	r.	in.
Sept. 20	1	ζ Pegasi	5	208 44 61.3	56.6	62.3	54.9	58.1	66.5	59.95	29.2120	.2079	29.950
	2	φ Aquarii	5	225 39 64.9	59.7	64.2	61.1	60.1	68.1	63.02	30.3722	.3679	- -
	3	γ Cephei	5	142 4 56.9	53.2	56.1	51.0	54.9	59.0	55.18	32.7254	.6713	29.950
	4	β Ceti	5	237 34 60.6	54.3	59.4	55.9	58.1	65.6	58.98	28.7888	.7941	29.951
	5	Moon, N. L.	5	205 44 51.7	46.3	49.8	46.2	47.5	52.0	48.92	30.4402	.4414	29.936
	6	Polaris	6	130 19 60.0	57.8	57.1	54.9	57.6	61.4	58.13	30.0168	.0131	- -
	7	Nadir, 1*h.* 14*m.*	5	359 59 63.5	61.5	64.2	59.1	60.8	63.2	62.04*d*	30.4494	.4483	
22	8	Nadir, 0*h.* 20*m.*	5	359 59 60.4	61.9	65.3	63.0	58.2	59.0	61.30*d*	30.7228	.7227	- -
	9	α Cassiopeæ	5	163 4 59.9	63.3	64.1	63.3	59.3	61.4	61.88	28.7438	.7267	29.936
	10	66 Piscium	5	254 14 60.0	59.8	55.2	64.1	56.3	62.2	59.60	32.5154	.5234	29.930
	11	Polaris	5	130 19 60.8	63.2	63.3	63.2	58.3	61.0	61.63	30.3342	.3313	29.932
	12	Nadir, 1*h.* 20*m*	5	359 59 60.8	63.0	66.4	64.1	58.8	58.8	61.98*d*	30.7253	.7252	
	13	B. A. C., 547	5	171 39 60.6	62.6	65.5	64.2	57.4	60.0	61.72	29.5014	.4865	29.928
	14	B. A. C., 740	5	137 49 59.3	62.1	63.0	62.4	57.1	60.0	60.65	27.2976	.8965	29.928
	15	Nadir, 2*h.* 40*m.*	5	359 59 59.0	62.2	65.5	63.1	57.2	56.7	60.62*d*	30.6994	.6994	
	16	Moon, N. L.	9	198 9 57.0	59.3	62.0	61.5	53.0	57.0	58.30	29.8311	.7957	29.926
23	17	Polaris, S. P.	8	127 29 57.8	58.5	56.5	55.6	56.9	59.3	57.43	31.3765	.3770	29.959
	18	Nadir, 13*h.* 50*m.*	5	359 59 59.5	58.5	60.5	56.2	58.5	58.2	58.57*d*	30.6548	.6548	
24	19	Nadir, 11*h.* 40*m.*	5	359 59 52.7	52.6	55.5	50.3	52.6	51.6	52.55*d*	30.5940	.5940	
	20	Sun, N. L.	4	219 14 56.4	55.0	56.6	53.5	55.6	59.5	56 10*d*	30.3802	.3813	30.118
	21	Polaris, S. P.	10	127 29 60.2	60 4	59.2	55.4	59.7	60.0	59.15*d*	31.3866	.3920	30.102
	22	Nadir, 13*h.* 35*m*	5	359 59 59.1	56.7	58.7	54 2	58.3	55.7	57.12	30.6222	.6222	
	23	α Gruis	5	266 19 55.3	51.2	55.6	52.0	53.9	56.2	54.03	31.4780	.4907	30.119
	24	Nadir, 22*h.* 20*m.*	5	359 59 57.8	57.1	60.0	54.1	55.9	55.2	56.68*d*	30.6508	.6508	
	25	α Piscis Australis	5	249 14 57.9	54.6	58.8	56.9	55.3	58.7	57.03	30.3359	.3342	30.120
	26	φ Aquarii	5	225 39 60.5	59.8	62.3	60.4	57.6	63.3	60.65	30.6510	.6503	30.120
	27	γ Cephei	5	142 4 62.9	63.7	64.9	61.2	61.7	63.7	63.02	33.1316	.0769	30.121
	28	B. A. C., 4070, S. P.	4	125 14 58.5	62.9	61.8	58.9	59.7	60.8	60.43	29.6170	.6192	30.122
	29	B. A. C., 4281, S. P.	15	123 19 58.9	61.2	61.3	59.3	58.2	60.6	59.92	31.3139	.4447	30.123
	30	Polaris	7	130 19 54.4	57.4	54.7	54.6	54.4	55.3	55.13	30.2267	.2171	30.124
	31	Nadir, 1*h.* 35*m.*	5	359 59 64.6	66.5	67.4	64.4	63.1	63.2	64.87*d*	30.7792	.7789	
25	32	Nadir, 12*h.* 35*m.*	5	359 59 57.6	57.9	60.0	55.7	57.6	56.7	57.58*d*	30.6463	.6463	- -
	33	Mercury, centre	5	226 19 57.1	54.9	56.6	53.5	55.4	58.5	56.00	33.1044	.1105	30.148
	34	Polaris, S. P.	5	127 24 56.2	55.3	53.5	50.7	55.8	55.8	54.55	26.3994	.5388	30.148
	35	Polaris, S. P.	5	127 29 52.4	52.7	51.0	47.5	54.2	53.0	51.80	30.9504	31.2668	- -
	36	Venus, S. L	5	233 39 57.9	55.9	56.1	54.2	56.0	62.2	57.05	28.8144	.8216	30.126
	37	Venus, N. L.	5	- - - -	- -	- -	- -	- -	- -	- -	29.0352	.0440	- -
	38	Nadir, 14*h.* 40*m.*	5	359 59 55.8	54.0	56.0	50.3	55.4	54.8	54.38*d*	30.5815	.5814	
	39	α Lyræ	5	180 14 55.5	56.5	57.3	51.6	55.7	56.4	55.50	31.6024	.5984	- -
	40	Nadir, 19*h.* 20*m.*	5	359 59 55.3	54.0	55.8	50.1	55.0	54.0	54.03*d*	30.5742	.5742	
	41	B. A. C., 6721	5	170 59 53.3	54.4	54.8	49.7	54.0	53.6	53.30	29.0648	.0610	30.116
	42	B. A. C., 7180	5	243 9 58.6	57.0	58.6	54.4	57.5	61.3	57.90	35.2510	.2643	30.114
	43	B. A. C., 7285	5	211 54 59.5	58.4	59.6	55.7	58.1	61.2	58.75	31.5374	.5356	30.114
	44	B. A. C., 7332	5	166 9 58.9	60.2	59.3	56.3	59.6	59.8	59.02	31.2836	.2738	- -
	45	61[1] Cygni	5	180 49 59.5	59.5	60.8	56.3	59.2	59.7	59.17	31.5858	.5737	- -
	46	B. A. C., 7467	5	244 34 59.5	58.5	60.0	57.2	57.7	62.8	59.28	26.5186	.5215	30.112
	47	B. A. C., 7508	5	148 39 59.8	59.3	60.1	55.4	59.2	59.1	58.82	29.5298	.5250	- -
	48	B. A. C., 7549	5	243 39 59.6	59.2	60.0	56.3	57.8	63.2	59.35	32.6964	.7006	30.108
	49	B. A. C., 7652	5	242 19 60.0	58.2	59.0	56.3	57.9	62.0	58.90	27.2154	.2175	- -
	50	α Gruis	5	266 19 59.9	58.1	62.0	57.1	59.3	62.3	59.78	31.4960	.5018	30.108
	51	Nadir, 22*h.* 10*m.*	5	359 59 59.4	60.5	61.6	57.1	59.8	59.6	59.67*d*	30.6823	.6823	
27	52	Nadir, 23*h.* 50*m.*	5	359 59 60.6	60.4	62.1	57.0	60.1	60.0	60.03	30.6892	.6892	- -
	53	B. A. C., 4281, S. P.	5	123 19 60.0	61.7	60.2	57.0	59.9	61.3	60.02	31.4820	.4838	29.586
	54	Nadir, 1*h.* 0*m.*	5	359 59 58.0	60.0	61.1	55.2	58.8	57.2	58.38	30.6645	.6645	- -
	55	Polaris	7	130 19 60.6	61.9	58.1	57.7	59.2	61.2	59.78	30.3364	.3318	29.614

PIER THERMOMETERS.

Refer'e No.	U.	L.	N.	S.	In	Refer'e No.	U.	L.	N.	S.	In.
	°	°	°	°	°		°	°	°	°	°
13	70.5	70.0	70.3	70.4	71.7	24	70.8	68.5	69.9	69.5	65.1
14	63.0	62.5	60.2	63.0	69.8	25	68.2	66.7	67.7	67.1	- -
18	62.0	62.1	59.1	62.2	- -	28	69.8	68.4	69.8	68.8	63.5
21	60.3	61.0	57.5	61.0	68.8	30	63.8	63.0	62.3	63.8	65.0

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Number.	THERM'S. At.	THERM'S. Ex.	Mic. zero.	CORRECTIONS FOR— Micrometer.	CORRECTIONS FOR— Object.	Corrected Reading.	Observed Declination.	Reduct'n to 1860.0.	Observer.	REMARKS.
	°	°	r.	′ ″	′ ″	° ′ ″	° ′ ″	″		
1	72.0	69.5	30.4065	+ 1 15.34	+ 30.70	208 46 45.99	+10 6 53.26	− 46.61		
2	- -	69.8	- - -	+ 2.43	+ 57.14	225 41 2.59	− 6 47 23.34	47.18		
3	71.6	69.4	- - -	− 2 22.35	− 43.61	142 1 49.22	+76 51 50.03	43.92		
4	71.0	69.0	- - -	+ 1 41.34	+ 1 27.99	237 38 8.31	−18 44 29.06	49.83		
5	70.5	68.1	- - -	− 2.19	− 8 8.22	205 36 38.51	+13 17 0.74			
6	- -	- -	- - -	+ 24.72	1 5.88	130 19 16.97	88 34 22.28	34.10		
7										
8	- -	- -	- - -	- - -	- - -	- - - -	- - - -	- -	H.	Sept. 21. Adjusted micrometer head to coincide with scale.
9	60.0	53.5	30.7000	+ 2 4.03	− 17.52	163 6 48.39	+55 46 50.86	43.50		
10	59.5	54.3	.6982	− 1 54.72	+ 3 20.94	254 16 25.82	−35 22 46.57	49.69		
11	59.5	53.7	.6968	+ 22.97	− 1 7.83	130 19 16.77	+88 34 22.48	34.77		
12										
13	- -	53.4	.6940	1 15.90	8.43	171 41 9.19	47 12 30.06	37.87		
14	58.3	52.9	.6907	2 55.63	52.19	137 52 4.09	81 1 35.16	25.99		
15										
16	58.0	52.5	.6876	+ 56.06	1 37.08	198 9 17.28	20 44 21.97			
17	69.0	73.0	30.6776	− 43.96	− 1 12.36	127 28 1.11	+88 34 21.86	34.95	He.	
18										
19										
20	68.7	72.3	30.6903	+ 19.42	+ 16 40.07	219 31 55.59	− 0 38 16.34			
21	70.0	72.9	- - -	− 44.10	− 1 12.70	127 28 2.35	+88 34 23.10	35.34		
22										
23	61.0	58.4	.7025	49.54	+ 12 16.47	266 31 20.96	−47 37 41.71	32.76		
24										
25	61.2	57.7	- - -	− 2 45.41	2 30.42	249 14 42.04	30 21 2.79	42.18		
26	61.3	57.4	- - -	+ 3.28	+ 58.93	225 41 2.86	− 6 47 23.61	47.22		
27	61.0	56.8	- - -	− 2 29.24	− 44.99	142 1 48.79	+76 51 50.46	− 45.48		
28	60.5	56.2	- - -	+ 1 8.09	1 21.51	125 14 47.01	86 21 7.76	+ 41.71		
29	60.1	56.2	- - -	− 46.65	1 27.66	123 17 45.61	84 24 6.36	+ 38.01		
30	59.7	55.8	- - -	+ 30.51	− 1 7.99	130 19 17.65	+88 34 21.60	− 35.54		
31										
32	- -	- -	- - -	- - -	- - -	- - - - -	- - - -	- -	H.	
33	69.0	73.0	30.6778	− 2 32.91	+ 53.83	226 18 16.92	− 7 24 37.76			
34	69.5	73.0	- - -	+ 4 20.14	− 1 12.81	127 28 1.88	+88 34 22.69	35.74		
35	- -	73.4	- - -	− 37.03	− 1 12.76	127 28 2.01				
36	71.0	73.5	- - -	+ 1 56.66	+ 1 10.71	233 43 4.42	−14 49 17.97	- -	-	Observed semi-diameter = 7.19″.
37	- -	- -	- - -	+ 1 42.68	1 10.30	233 42 50.03				
38										
39	- -	67.7	.6784	− 57.88	+ 0.24	180 13 57.91	+38 39 41.34	22.28		
40										
41	68.4	65.0	- - -	+ 1 41.66	− 8.96	171 1 26.00	+47 52 13.25	32.64		
42	67.5	63.2	- - -	− 4 48.25	+ 1 51.66	243 7 1.31	−24 13 22.06	25.96		
43	- -	62.5	- - -	53.89	+ 35.48	211 54 40.34	+ 6 58 58.91	36.72		
44	- -	- -	- - -	37.44	− 14.05	166 9 7.53	52 44 31.72	43.86		
45	- -	62.7	- - -	− 56.29	+ 0.81	180 49 3.69	+38 4 35.56	48.52		
46	67.0	62.4	- - -	+ 4 21.26	+ 1 59.77	244 41 20.31	−25 47 41.06	32.46		
47	- -	62.3	- - -	+ 1 12.48	− 34.69	148 40 36.61	+70 13 2.64	45.84		
48	67.0	62.4	- - -	− 2 7.10	+ 1 54.47	243 39 46.72	−24 46 7.47	34.35		
49	- -	- -	- - -	+ 3 37.53	1 48.51	242 25 24.94	23 31 45.69	37.06		
50	66.5	63.0	- - -	− 51.75	+ 12 8.07	266 31 16.10	−47 37 36.85	− 32.58		
51										
52	- -	- -	- - -	- - -	- - -	- - - -	- - - -	- -	He.	
53	66.0	59.0	30.6894	− 49.93	− 1 25.59	123 17 44.50	+84 24 5.25	+ 39.27		
54										
55	65.3	58.3	30.6894	+ 22.48	− 1 6.48	130 19 15.78	+88 34 23.47	− 36.76		

PIER THERMOMETERS.

Refer'e No.	U.	L.	N.	S.	In.	Refer'e No.	U.	L.	N.	S.	In.
	°	°	°	°	°		°	°	°	°	°
37	62.0	61.3	59.6	62.0	64.5	46	67.5	67.0	67.8	68.0	65.2
38	68.6	66.5	67.4	67.0	62.5	57	65.5	65.2	65.5	65.5	64.5
44	71.3	69.7	70.3	71.5	62.9	58	68.8	66.6	66.9	67.5	- -

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DATE.	Number.	OBJECT.	No. of mic. readings.	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Correct'd.	Barometer.
1861.				° ′ ″	″	″	″	″	″	″	r.	r.	in
Sept. 28	1	Nadir, 12h. 0m.	5	359 59 54.5	56.0	57.6	53.6	55.0	52.8	54.98d	30.5977	.5977	- -
	2	Sun, N. L.	5	220 49 57.5	56.8	59.1	54.6	57.1	58.6	57.28	31.7480	.7699	29.948
	3	Polaris, S. P.	5	127 24 58.0	60.6	58.3	56.1	59.0	59.1	58.52	26.5572	.5570	- -
	4	Polaris, S P.	5	127 29 59.3	61.0	59.0	57.0	60.0	60.2	59.42	31.3516	.3318	29.954
	5	Mercury, centre	5	228 19 59.8	60.6	62.8	58.8	60.3	64.2	61.08	29.2398	.2379	29.958
	6	Nadir	5	359 59 59.2	61.2	62.0	58.4	59.5	58.8	59.85d	30.6719	.6719	
	7	Venus, N. L.	4	234 59 59.8	59.2	61.4	58.6	58.0	61.9	59.82	31.3785	.3783	- -
	8	Venus, S L	4	- - -	- -	- -	- -	- -	- -	- -	31.1710	.1782	29.976
	9	α Lyræ	5	180 14 59.7	62.1	63.9	59.9	61.0	58.5	60.85	31.6974	.6955	- -
	10	Nadir, 18h 45m.	5	359 59 59.8	62.4	63.2	61.1	59.2	59.0	60.78d	30.7014	.7014	
	11	B. A. C., 6721	5	170 59 60.0	63.9	63.5	61.4	59.3	60.1	61.37	29.2014	.1962	30.132
	12	Arg., 20217	5	235 39 59.9	60.1	64.0	61.6	57.9	62.6	61.02	32.7508	.7549	30.144
	13	Arg., 20337	5	234 39 58.4	59.0	61.4	58.6	55.7	60.3	58.90	33.3792	.3802	30.144
	14	B. A. C., 7071	5	247 54 58.2	58.3	61.5	59.4	58.0	60.4	59.30	30.8268	.8312	- -
	15	B. A. C., 7093	5	246 4 58.2	59.4	61.3	59.8	57.2	61.1	59.50	29.4530	.4540	30.150
	16	Nadir, 20h. 45m	5	359 59 58.0	61.2	61.9	59.6	57.2	56.5	59.07d	30.6810	.6810	
	17	B. A C., 7332	5	166 9 57.5	60.0	59.4	59.5	56.3	57.5	58.37	31.3072	.2841	- -
	18	61¹ Cygni	5	180 49 57.4	58.4	59.8	57.9	55.7	56.3	57.58	31.5894	.5820	30.164
	19	B. A. C, 7508	5	148 39 58.2	59.0	60.3	58.0	56.3	55.7	57.92	29.5366	.5254	30.164
30	20	Polaris, S. P.	8	127 29 59.8	59.1	56.8	56.9	57.8	60.8	58.53d	31.3099	.3096	30.476
	21	Nadir	5	359 59 60.0	61.4	61.6	58.8	59.7	59.5	60.17d	30.6705	.6705	
	22	Venus, S. L.	4	235 49 56.7	55.4	58.3	53.3	55.1	59.4	56.37d	31.2125	.2069	30.460
	23	Venus, N. L.	4	- - -	- -	- -	- -	- -	- -	- -	31.4092	.4352	- -
	24	α Lyræ	5	180 14 57.2	57.6	60.3	53.5	57.5	57.5	57.27	31.6168	.6134	- -
	25	Nadir, 18h. 50m.	5	359 59 56.9	58.5	60.2	55.1	58.5	56.1	57.55d	30.6346	.6346	
	26	B. A. C., 4281, S. P.	8	123 19 60.2	64.4	64.1	62.5	60.2	61.6	62.17d	31.4482	.4620	30.410
	27	Nadir, 1h. 0m.	5	359 59 56.6	60.8	63.3	60.5	57.6	55.8	59.10d	30.6597	.6597	
	28	Polaris	6	130 19 58.3	63.1	61.7	59.9	58.4	60.0	60.23	30.3275	.3007	30.416
Oct. 1	29	Nadir, 18h. 20m.	2	359 59 57.3	56.3	61.1	52.4	57.3	56.5	56.82	30.6252	.6252	- -
	30	α Lyræ	5	180 14 57.3	58.5	61.1	52.7	58.4	58.8	57.80	31.6322	.6296	- -
	31	Nadir, 18h. 50m.	10	359 59 57.6	58.4	60.7	54.8	59.8	57.4	58.12d	30.6468	.6468	
	32	B. A. C, 6574	5	197 34 57.0	56.2	59.6	53.0	56.1	58.1	56.67	31.8982	.8972	30.334
	33	B. A. C., 6721	5	170 59 57.1	58.1	60.9	54.2	58.3	58.2	57.80	29.1306	.1258	- -
	34	Arg., 20055	5	236 39 57.1	55.7	59.6	54.2	58.7	60.3	57.60	32.2934	.2951	30.332
	35	B. A. C., 6887	5	248 19 56.9	54.1	59.0	53.9	57.7	58.9	56.75	31.5146	.5200	30.332
	36	B. A. C., 6948	5	249 14 56.4	53.2	58.4	53.6	56.5	58.8	56.15	29.1326	.1360	- -
	37	B. A C, 7071	5	247 54 56.7	54.8	59.0	54.6	58.0	59.8	57.15	30.7678	.7731	- -
	38	B. A. C, 7093	5	246 4 56.0	55.1	58.6	54.5	57.2	59.9	56.88	29.3718	.3723	30.334
	39	Nadir, 20h. 40m	5	359 59 56.8	57.2	59.7	54.2	57.6	56.5	57.00d	30.6245	.6245	
	40	B. A. C., 7332	5	166 9 55.9	57.3	58.2	54.2	58.0	56.9	56.75	31.2698	.2636	- -
	41	61¹ Cygni	5	180 49 55.5	56.0	58.2	52.2	56.2	55.7	55.63	31.5432	.5363	30.334
	42	α Cephei	5	156 54 57.2	57.3	59.0	53.3	58.9	57.2	57.15	31.9352	.9125	- -
	43	B. A. C., 7508	3	148 39 57.0	56.9	58.7	53.0	57.9	56.2	56.62	29.5920	.4706	30.332
2	44	α Ursæ Majoris	5	156 24 60.0	62.2	61.4	57.8	61.7	60.5	60.60	31.2594	.2552	30.140
	45	Nadir, 11h. 20m.	5	359 59 59.8	59.6	62.5	56.5	60.2	59.7	59.72d	30.6622	.6622	
3	46	Sun, S. L.	5	223 19 59.6	58.3	59.5	55.8	57.9	62.2	58.88	33.1236	.1213	- -
	47	Sun, N. L.	5	222 44 60.6	58.5	60.4	57.2	59.2	64.8	60.12	30.2816	.3056	30.136
	48	Polaris, S. P.	5	127 29 59.9	59.4	60.0	53.9	61.9	61.6	59.45	31.3486	.3509	- -
	49	Polaris, S. P.	5	127 24 58.8	59.2	59.2	53.0	60.7	61.8	58.78	26.5474	.5470	30.124
	50	Mercury, centre	5	231 34 57.5	52.6	57.0	51.0	57.0	62.1	56.20	30.2970	.2944	30.116
	51	Venus, N. L.	5	236 59 60.2	52.1	59.5	51.6	61.0	63.3	57.95	29.6230	.6269	30.110
	52	Venus, S. L.	5	- - -	- -	- -	- -	- -	- -	- -	29.4012	.4080	- -
	53	Nadir, 15h 15m	5	359 59 59.2	57.9	60.5	52.7	60.8	60.1	58.53d	30.6307	.6307	
	54	Nadir, 18h. 20m.	4	359 59 59.3	54.8	60.0	50.5	58.6	59.0	57.03d	30.6110	.6110	- -
	55	α Lyræ	5	180 14 57.6	55.4	58.7	49.5	57.8	58.8	56.30	31.6184	.6061	- -
	56	B. A. C, 6574	5	197 34 58.5	55.5	59.0	51.0	57.2	60.5	56.95	31.8894	.8883	30.124
	57	Nadir, 19h. 15m.	5	359 59 58.4	56.0	59.1	51.4	59.2	58.8	57.15d	30.6184	.6184	
	58	B. A. C., 6829	5	249 49 57.7	52.1	58.0	50.5	58.5	61.1	56.32	33.3808	.3819	30.130
	59	B. A. C., 6887	5	248 19 58.3	53.6	58.9	51.5	59.1	62.0	57.23	31.4696	.4713	30.128

PIER THERMOMETERS.

Refer'e No.	U.	L.	N.	S.	In.	Refer'e No.	U.	L.	N.	S.	In.
	°	°	°	°	°		°	°	°	°	°
1	67.9	65.8	66.6	66.8	66.2	16	61.5	60.7	62.3	60.6	65.8
6	68.4	67.0	67.6	68.0	66.3	21	66.0	62.7	64.0	64.0	60.0
10	64.0	63.6	64.4	63.9	66.0	27	58.1	57.3	55.4	57.7	60.5

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Number.	THERM'S. At.	THERM'S. Ex.	Mic. Zero.	CORRECTIONS FOR— Micrometer.	CORRECTIONS FOR— Object.	Corrected Reading.	Observed Declination.	Reduct'n to 1860.0.	Observer.	REMARKS.
	°	°	r.	′ ″	′ ″	° ′ ″	° ′ ″	″		
1	- -	- -	- - -	- - -	- - -	- - - -	- - - -	- -	H.	
2	66.8	61.8	30.6764	— 1 8.73	+ 16 44.27	221 5 32.82	— 2 11 53.57			
3	- -	- -	- - -	+ 4 18.92	— 1 13.77	127 28 3.67	+88 34 24.81	— 36.96		
4	67.0	62.8	- - -	— 41.19	— 1 13.77	127 28 4.46				
5	67.0	63.0	- - -	+ 1 30.42	+ 58.78	228 22 30.28	— 9 28 51.03	- -	-	Very unsteady.
6										
7	- -	- -	- - -	— 44.11	1 15.09	235 0 30.80	—16 6 58.03	- -	-	Clouds. Observed semi-diameter = 6″.48.
8	67.5	62.5	- - -	31.54	1 15.48	235 0 43.76				
9	- -	58.3	.6924	— 1 3.05	+ 0.24	180 13 58.04	+38 39 41.21	22.31		
10										
11	63.0	55.7	- - -	+ 1 34.04	— 9.14	171 1 26.27	+47 52 12.98	32.94		
12	62.0	55.3	- - -	— 2 9.63	+ 1 24.47	235 39 15.86	—16 45 36.61	21.35		
13	62.4	55.2	- - -	2 48.93	1 21.37	234 38 31.34	15 44 52.09	23.25		
14	- -	55.0	- - -	— 8.72	2 21.84	247 57 12.42	29 3 33.17	21.94		
15	60.5	55.0	- - -	+ 1 17.84	+ 2 10.05	246 8 27.39	—27 14 48.14	23.09		
16										
17	- -	- -	- - -	— 37.19	— 14.32	166 9 6.86	+52 44 32.39	44.48		
18	60.0	54.1	- - -	— 55.91	+ 0.84	180 49 2.51	38 4 36.74	49.07		
19	59.0	53.6	- - -	+ 1 13.35	— 35.37	148 40 35.90	70 13 3.35	46.69		
20	63.7	65.4	30.6678	— 40.34	— 1 14.69	127 28 3.50	+88 34 24.25	37.75	He.	
21										
22	63.5	66.0	- - -	33.88	+ 1 18.67	235 50 41.16	—16 56 54.55	- -	-	Observed semi-diameter = 7″.36.
23	- -	- -	- - -	48.23	1 18.30	235 50 26.44				
24	- -	58.5	30.6736	59.07	+ 0.24	180 13 58.44	+38 39 40.81	— 22.26	H.	
25										
26	54.7	49.3	30.6740	— 49.53	— 1 29.74	123 17 42.90	84 24 3.65	+ 40.44	He.	
27										
28	55.8	48.4	- - -	+ 23.46	— 1 9.67	130 19 14.02	88 34 25.23	— 37.93		
29	- -	- -	- - -	- - -	- - -	- - - -	- - - -	- -	H.	
30	- -	- -	30.6763	— 59.92	+ 0.24	180 13 58.12	38 39 41.13	22.24		
31										
32	64.7	60.2	.6744	— 1 16.86	+ 18.27	197 33 58.08	21 19 41.17	24.20		
33	- -	59.0	- - -	+ 1 37.33	— 9.14	171 1 25.99	+47 52 13.26	33.10		
34	64.3	58.3	- - -	— 1 41.87	+ 1 27.74	236 39 43.47	—17 46 4.22	18.87		
35	64.2	58.0	- - -	— 53.15	2 24.69	248 21 28.29	29 27 49.04	16.73		
36	- -	57.6	- - -	+ 1 36.69	2 32.05	249 19 4.89	30 25 25.64	18.27		
37	- -	57.3	- - -	— 6.20	2 22.02	247 57 12.97	29 3 33.72	21.66		
38	63.8	57.3	- - -	+ 1 21.85	+ 2 10.23	246 8 28.96	—27 14 49.71	22.78		
39										
40	- -	- -	- - -	— 37.02	— 14.32	166 9 5.41	+52 44 33.84	44.98		
41	63.3	56.8	- - -	54.16	+ 0.83	180 49 2.30	38 4 36.95	49.48		
42	- -	56.8	- - -	— 1 17.82	— 24.79	156 53 14.54	62 0 24.71	46.62	-	Observed through clouds.
43	63.0	56.8	- - -	+ 1 15.68	35.33	148 40 36.97	70 13 2.28	— 47.42	-	Observed through clouds.
44	65.3	70.5	30.6604	— 37.38	— 24.55	156 23 58.67	+62 29 40.58	+ 43.73		
45										
46	- -	- -	- - -	— 2 34.67	+ 46.60	223 18 10.81	— 4 8 30.21	- -	-	Very unsteady. Observed semi-diameter = 16′ 1″.06.
47	70.0	74.6	- - -	+ 22.30	+ 45.69	222 46 8.11				
48	- -	- -	- - -	— 43.40	— 1 12.39	127 28 3.66	+88 34 25.05	— 38.63		
49	71.0	75.7	- - -	+ 4 18.54	— 1 12.39	127 28 4.93				
50	73.0	76.3	- - -	23.01	+ 1 4.63	231 36 23.84	—12 42 44.59			
51	74.8	77.2	- - -	1 4.96	1 19.13	237 2 22.04	—18 8 49.85	- -	-	Observed semi-diameter = 7″.06.
52	- -	- -	- - -	+ 1 18.72	1 19.49	237 2 36.16				
53										
54	- -	- -	- - -	- - -	- - -	- - - -	- - - -	- -	-	Quicksilver much agitated.
55	- -	- -	.6632	— 59.27	0.24	180 13 57.27	+38 39 41.98	22.21		
56	71.5	70.0	- - -	1 17.00	17.79	197 33 57.74	+21 19 41.51	24.29		
57										
58	71.0	67.9	- - -	2 50.88	2 31.90	249 49 37.34	—30 55 58.09	14.57		
59	71.0	67.9	30.6632	— 50.79	+ 2 20.85	248 21 27.29	—29 27 48.04	— 16.59		

PIER THERMOMETERS.

Refer'e No.	U.	L.	N.	S.	In.	Refer'e No.	U.	L.	N.	S.	In.
	°	°	°	°	°		°	°	°	°	°
29	64.5	64.0	64.2	64.5	60.2	54	71.0	68.4	71.2	71.0	64.5
39	63.0	62.1	63.1	63.1	60.6	57	71.0	68.6	71.0	70.6	65.0
45	67.6	66.0	67.5	66.9	62.8						

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DATE.	Number.	OBJECT.	No. of mic. readings.	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Correct'd.	Barometer.
1861.				° ′ ″	″	″	″	″	″	″	r.	r.	in.
Oct. 3	1	B. A. C., 6948	5	249 19 57.9	53.0	58.3	51.7	58.8	61.2	56.82	33.8432	.8475	- -
	2	B. A. C., 7018	5	247 59 58.0	54.4	59.0	51.9	59.6	62.0	57.48	32.6746	.6780	30.130
	3	B. A. C., 7063	5	234 24 58.5	54.7	58.7	50.3	57.0	61.2	56.73	32.3692	.3693	- -
	4	B. A. C., 7180	5	243 9 58.0	53.8	58.0	50.1	57.2	60.5	56.27	35.2080	.2099	30.130
	5	Nadir, 20*h*. 50*m*.	5	359 59 57.6	55.6	59.0	51.1	58.2	57.7	56.53*d*	30.6069	.6069	
	6	61¹ Cygni	5	180 49 57.0	55.2	58.0	50.4	57.2	57.6	55.90	31.5430	.5279	- -
	7	61² Cygni	5	- - - -	- -	- -	- -	- -	- -	- -	31.4616	.4411	- -
	8	B. A. C., 7436	5	243 19 57.5	55.0	57.0	50.9	57.0	60.5	56.32	33.8330	.8373	30.128
	9	B. A. C., 7508	5	148 39 57.0	54.6	57.0	50.1	57.7	57.3	55.62	29.5112	.5070	- -
	10	B. A. C., 7549	5	243 39 58.9	56.2	59.7	53.0	58.3	62.8	58.15	32.6530	.6573	30.130
	11	B. A. C., 7620	5	229 49 57.8	54.6	58.0	52.5	57.5	61.6	57.00	30.6226	.6246	30.132
	12	11 Piscis Australis	5	247 9 57.0	53.8	58.0	52.2	56.8	60.9	56.45	31.8566	.8605	30.134
	13	α Gruis	5	266 19 58.1	55.5	60.4	52.8	58.9	61.5	57.87	31.2928	.2963	30.134
	14	Nadir, 22*h*. 15*m*	5	359 59 57.5	56.1	59.2	52.1	58.0	57.8	56.78*d*	30.6175	.6175	
	15	α Piscis Australis	5	249 9 57.5	54.0	58.9	53.8	58.0	61.4	57.27	28.4456	.4464	30.132
	16	α Ursæ Majoris, S. P.	5	101 29 58.9	59.9	58.5	55.0	59.4	61.2	58.82	32.6914	.6979	30.132
	17	α Ursæ Majoris	5	156 24 59.0	62.0	61.8	57.6	61.6	60.5	60.42	31.2494	.2417	30.167
	18	Nadir, 11*h*. 30*m*.	5	359 59 58.8	59.2	62.0	55.8	59.3	58.0	58.85*d*	30.6485	.6485	
4	19	Sun, N. L.	5	223 9 57.6	56.3	58.8	52.9	56.5	60.1	57.03	32.0248	.0227	- -
	20	Sun, S. L.	5	223 39 56.9	56.3	58.7	53.0	57.0	59.1	56.83	30.0520	.0698	30.148
	21	Polaris, S. P.	5	127 24 56.1	54.9	55.1	49.0	57.5	56.8	54.90	26.4678	.4918	- -
	22	Polaris, S. P.	5	127 29 54.8	54.3	55.3	48.2	57.5	57.3	54.57	31.2686	.2766	30.140
	23	Nadir, 13*h*. 25*m*.	5	359 59 59.5	57.2	61.4	53.1	59.6	59.4	58.37*d*	30.6406	.6406	
	24	Mercury, centre	3	232 14 60.6	57.7	62.2	55.0	61.0	65.4	60.32	33.5483	.6054	30.124
	25	Nadir, 18*h*. 20*m*	5	359 59 54.6	48.9	54.5	43.6	54.3	54.3	51.70	30.5199	.5197	- -
	26	α Lyræ	5	180 14 53.1	50.0	53.3	44.2	53.0	54.8	51.40	31.5304	.5259	- -
	27	B. A. C., 6574	5	197 34 52.5	49.0	52.1	44.5	51.6	54.4	50.68	31.7866	.7812	30.082
	28	B. A. C., 6594	5	250 54 53 6	48.1	52.8	45.0	54.1	58.8	52.07	30.3832	.3837	- -
	29	B. A. C., 6627	5	249 54 55.5	49.5	54.4	47.7	55.3	60.9	53.88	30.6436	.6582	- -
	30	B. A. C., 6665	5	- - - -	- -	- -	- -	- -	- -	- -	30.3416	.3422	30.083
	31	Nadir, 19*h*. 30*m*.	5	359 59 55.4	51.3	55.1	46.4	55.0	55.9	53.18*d*	30.5537	.5536	
	32	B. A. C., 7011	5	248 19 55.6	50.3	55.1	49.0	55.9	60.6	54.42	28.2562	.2568	- -
	33	B. A. C., 7026	5	- - - -	- -	- -	- -	- -	- -	- -	28.1714	.1789	30.028
5	34	Sun, S. L.	5	224 4 58.6	56.2	57.6	53.5	57.4	63.3	57.77	31.7658	.7612	- -
	35	Sun, N. L.	5	223 34 57.0	55.1	56.0	51.4	55.9	60.1	55.92	33.7446	.7619	30.032
	36	Polaris, S. P.	5	127 29 57.2	55.3	56.0	48.6	58.6	58.7	55.73	31.2826	.2948	30.028
	37	Nadir, 13*h*. 25*m*.	5	359 59 56.2	51.7	56.5	48.2	55.4	55.8	53.97*d*	30.5686	.5686	
	38	Mercury, centre	5	232 49 55.1	51.3	55.0	49.1	55.1	58.2	53.97	32.7108	.7123	30.014
	39	Nadir, 15*h*. 0*m*.	6	359 59 55.9	50.0	54.2	46.3	53.6	56.2	52.70*d*	30.5452	.5451	
	40	Venus, S. L.	5	237 49 55.2	50.0	54.1	47.8	57.0	60.6	54.12	33.3646	.3710	- -
	41	Venus, N. L.	5	- - - -	- -	- -	- -	- -	- -	- -	33.5672	.5797	30.000
	42	Nadir, 18*h*. 10*m*.	6	359 59 60.0	54.1	59.1	48.6	59.0	60.6	56.90*d*	30.6115	.6115	
	43	α Lyræ	5	180 14 60.0	56.1	59.1	49.9	58.8	62.0	57.65	31.6136	.6108	- -
	44	B. A. C., 6594	5	250 54 60.5	54.9	59.2	50.9	59.5	67.0	58.67	30.4490	.4497	29.986
	45	B. A. C., 6609	5	248 39 60.1	53.6	58.2	50.9	58.5	65.0	57.72	27.8090	.8144	- -
	46	B. A. C., 6613	5	- - - -	- -	- -	- -	- -	- -	- -	32.4526	.4773	- -
	47	B. A. C., 6693	5	250 44 60.1	53.3	58.5	51.2	59.0	65.0	57.85	30.3326	.3337	29.990
7	48	Sun, N. L.	5	224 19 60.9	57.8	59.7	54.6	59.4	63.8	59.37	32.7760	.7722	- -
	49	Sun, S. L.	4	224 49 62.6	59.5	63.0	56.3	61.0	65.9	61.38	30.8078	.8234	30.074
	50	Nadir, 13*h*. 20*m*.	6	359 59 60.0	57.2	60.8	53.3	59.2	59.8	58.38*d*	30.6319	.6319	
	51	Polaris, S. P.	5	127 29 58.7	54.5	55.7	50.3	57.5	61.1	56.30	30.9996	31.2887	30.056
8	52	Nadir, 18*h*. 10*m*.	6	359 59 60.0	60.2	63.3	57.6	58.2	58.3	59.60*d*	30.6599	.6599	
	53	α Lyræ	5	180 14 60.2	61.0	63.7	58.1	58.9	59.8	60.28	31.6764	.6739	- -
	54	B. A. C., 6693	5	250 44 60.8	59.2	63.7	60.1	58.9	62.9	60.93	30.5136	.5197	30.138
	55	B. A. C., 6829	5	249 44 62.0	60.4	65.8	62.9	60.2	64.0	62.55	28.7826	.7882	- -
	56	B. A. C., 6841	5	- - - -	- -	- -	- -	- -	- -	- -	30.3798	.3804	30.140
	57	Nadir, 20*h*. 5*m*	6	359 59 59.1	60.8	64.3	59.8	57.5	57.9	59.90*d*	30.6790	.6790	
	58	B. A. C., 7011	5	248 24 60.2	58.0	63.2	61.0	57.8	61.3	60.25	33.2452	.2457	- -
	59	B. A. C., 7026	5	- - - -	- -	- -	- -	- -	- -	- -	33.1578	.1595	30.142
	60	B. A. C., 7063	5	234 24 61.1	59.8	64.2	60.0	56.0	61.9	60.50	32.4788	.4796	- -

PIER THERMOMETERS.

Refer'e No.	U.	L.	N.	S.	In.	Refer'e No.	U.	L.	N.	S.	In.
	°	°	°	°	°		°	°	°	°	°
5	69.0	67.3	69.5	69.1	65.3	23	72.2	70.1	72.2	71.8	65.0
14	68.0	66.5	68.0	67.9	65.5	25	74.7	73.2	74.2	74.9	66.7
18	70.2	66.5	68.4	68.5	65.0	37	75.5	72.7	74.7	75.0	68.7

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Number.	THERM'S. At.	THERM'S. Ex.	Mic. zero.	CORRECTIONS FOR— Micrometer.	CORRECTIONS FOR— Object.	Corrected Reading.	Observed Declination.	Reduct'n to 1860.0.	Observer.	REMARKS.
	°	°	r.	° ′ ″	′ ″	° ′ ″	° ′ ″	″		
1	- -	67.3	30.6632	— 3 20.14	+ 2 28.08	249 19 4.76	—30 25 25.51	— 18.30	H.	
2	70.5	66.9	- - -	2 6.63	2 18.67	248 0 9.52	29 6 30.27	20.40		
3	- -	66.8	- - -	1 47.23	1 18.77	234 24 28.27	15 30 49.02	24.20		
4	70.2	66.2	- - -	4 45.77	1 57.02	243 7 1.52	—24 13 22.27	25.36		
5										
6	- -	- -	- - -	54.34	0.82	180 49 2.38	+38 4 36.87	49.73		
7	- -	65.0	- - -	48.89	0.82	180 49 7.83	+38 4 31.42	49.73		
8	69.3	65.1	- - -	— 3 19.51	+ 1 52.17	243 18 28.98	—24 24 49.73	31.40		
9	- -	65.2	- - -	+ 1 12.67	— 34.51	148 40 33.78	+70 13 5.47	47.88		
10	69.0	64.6	- - -	— 2 5.34	+ 1 54.03	243 39 46.84	—24 46 7.59	33.81		
11	69.0	64.7	- - -	+ 2.42	1 7.18	229 51 6.60	10 57 27.35	38.90		
12	68.8	64.4	- - -	— 1 15.26	2 13.93	247 10 55.12	28 17 15.87	35.02		
13	68.5	63.9	- - -	— 39.80	12 7.15	266 31 25.22	47 37 45.97	31.06		
14										
15	67.0	62.8	- - -	+ 2 19.33	+ 2 28.91	249 14 45.51	—30 21 6.26	— 40.94		
16	67.1	62.7	- - -	— 2 7.89	— 4 33.49	101 23 17.44	+62 29 38.19	+ 43.70		
17	67.0	70.3	30.6666	36.15	— 24.57	156 23 59.70	+62 29 39.55	+ 43.85		
18										
19	- -	- -	- - -	— 1 25.24	+ 46.19	223 9 17.98	— 4 31 40.47	- -	-	Observed semi-diameter = 16′ 1″.74.
20	71.0	76.5	- - -	+ 37.52	+ 47.11	223 41 21.46				
21	- -	- -	- - -	+ 4 22.41	— 1 12.19	127 28 5.12	+88 34 25.33	— 39.16		
22	73.0	77.4	- - -	— 38.34	— 1 12.19	127 28 4.04				
23										
24	73.0	79.3	- - -	3 4.71	+ 1 5.71	232 13 1.32	—13 19 22.07			
25	- -	- -	- - -	- - -	- - -	- - - -	- - - -	- -	-	Unsatisfactory: weight, ½.
26	- -	- -	.6586	54.51	0.24	180 13 57.13	+38 39 42.12	22.23		
27	74.5	72.6	- - -	— 1 10.56	17.67	197 33 57.79	+21 19 41.46	24.22		
28	- -	72.5	- - -	+ 17.28	2 39.84	250 57 49.19	—32 4 9.94	7.60		
29	- -	- -	- - -	0.03	2 31.40	249 57 25.31	31 3 46.06	8.74		
30	74.3	72.5	- - -	19.89	2 31.44	249 57 45.21	31 4 5.96	9.65		
31										
32	- -	- -	- - -	2 30.97	2 19.82	248 24 45.21	29 31 5.96	19.91		
33	73.5	71.4	- - -	+ 2 35.87	2 19.83	248 24 50.12	29 31 10.87	20.93		
34	- -	- -	30.6629	— 1 9.03	47.27	224 4 36.01	— 4 54 52.50	- -	-	Observed semi-diameter = 16′ 4″.27.
35	73.3	79.5	- - -	3 14.78	+ 46.34	223 32 27.48				
36	74.0	80.0	- - -	39.72	— 1 11.56	127 28 4.45	+88 34 25.20	39.50		
37										
38	76.0	82.2	- - -	2 8.81	+ 1 6.47	232 48 51.63	—13 55 12.38			
39										
40	- -	- -	- - -	2 50.22	1 20.56	237 48 24.46	—18 54 38.49	- -	-	Observed semi-diameter = 6″.72.
41	78.4	83.1	- - -	3 3.33	1 20.23	237 48 11.02				
42										
43	- -	78.0	.6608	— 59.71	0.24	180 13 58.18	+38 39 41.07	22.24		
44	78.3	76.8	- - -	+ 13.27	2 38.03	250 57 49.97	—32 4 10.72	7.61		
45	- -	- -	- - -	+ 2 58.90	2 20.73	248 45 17.35	29 51 38.10	8.65		
46	- -	76.3	- - -	— 1 54.18	2 20.14	248 40 23.68	29 46 44.43	8.74		
47	78.0	76.0	- - -	+ 20.56	2 36.83	250 47 55.24	31 54 15.99	10.30		
48	- -	- -	30.6577	— 2 12.91	47.48	224 18 33.94	— 5 40 57.41	- -	-	Observed semi-diameter = 16′ 2.″72.
49	78.0	82.0	- - -	10.42	+ 48.42	224 50 39.38				
50										
51	78.3	80.9	- - -	39.67	— 1 11.48	127 28 5.15	+88 34 25.90	40.25		
52										
53	- -	- -	30.6691	— 1 3.16	+ 0.24	180 13 57.36	+38 39 41.89	22.29		
54	65.4	58.8	.6758	+ 9.81	2 43.08	250 47 53.82	—31 54 14.57	10.33		
55	- -	- -	.6785	1 58.81	2 35.10	249 49 36.46	30 55 57.21	13.51		
56	64.5	57.8	.6788	+ 18.76	2 34.87	249 47 56.18	30 54 16.93	14.90		
57										
58	- -	- -	.6820	— 2 41.14	2 24.51	248 24 43.62	29 31 4.37	19.82		
59	64.0	56.8	.6822	2 35.71	2 24.52	248 24 49.06	29 31 9.81	20.13		
60	- -	57.0	30.6829	— 1 52.93	+ 1 20.39	234 24 27.96	—15 30 48.71	— 25.76		

PIER THERMOMETERS.

Refer'e No.	U.	L.	N.	S.	In.	Refer'e No.	U.	L.	N.	S.	In.
	°	°	°	°	°		°	°	°	°	°
39	77.8	74.4	77.3	77.1	69.0	52	73.5	71.0	71.5	72.5	73.6
42	79.0	77.0	77.5	78.0	70.3	57	66.6	64.6	67.0	65.5	73.2
50	77.9	76.6	78.1	77.7	74.3						

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DATE.	Number.	OBJECT.	No. of mic. readings.	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Correct'd.	Barometer.
1861.				° ′ ″	″	″	″	″	″	″	r.	r.	in.
Oct 8	1	Weisse XX, 849	5	228 59 61.6	60.4	65.8	61.8	59.2	64.0	62.13	30.4772	.4768	- -
	2	Anonymous, 20h. 38m.	5	229 24 61.4	60.3	65.7	61.5	59.2	63.6	61.95	26.2992	.2991	- -
	3	Anonymous, 20h. 38m.	3	- - - -	- -	- -	- -	- -	- -	- -	33.9910	34.0070	30.140
11	4	Sun, S. L.	4	226 19 59.5	58.2	59.8	57.9	57.2	63.4	59.33	29.6738	.6934	29.996
	5	Nadir, 13h. 40m.	6	359 59 59.6	60.9	62.6	58.2	60.4	59.2	60.15d	30.6784	.6784	
	6	Mercury, S. L.	5	236 4 57.7	56.4	60.2	55.6	57.8	61.5	58.20	31.1050	.1159	29.956
	7	Mercury, N. L	5	- - - -	- -	- -	- -	- -	- -	- -	31.1752	.1930	- -
	8	Nadir, 15h.	6	359 59 57.6	57.0	59.1	54.5	57.6	56.8	57.10d	30.6188	.6188	
	9	Venus, N. L.	5	239 49 56.2	54.2	56.9	52.9	57.8	59.6	56.27	28.1244	.1314	29.938
	10	Venus, S. L	5	- - - -	- -	- -	- -	- -	- -	- -	27.8784	.8875	- -
	11	Nadir, 18h. 15m.	6	359 59 54.9	54.0	56.8	51.0	55.4	54.2	54.38d	30.5774	.5774	
	12	α Lyræ	5	180 14 55.4	55.8	57.3	51.0	55.9	55.3	55.12	31.5910	.5887	- -
	13	Moon, S. L.	9	237 44 55.3	52.2	56.7	51.8	56.3	59.0	55.22	31.9528	.9051	29.878
	14	Nadir, 20h. 25m	6	359 59 54.6	54.0	56.9	51.2	55.4	53.8	54.32d	30.5818	.5818	
12	15	Sun, N. L.	5	226 9 57.2	58.4	58.8	57.3	56.4	59.8	57.98	29.2594	.2520	29.812
	16	Polaris, S. P.	5	127 29 56.3	59.0	57.9	54.7	58.8	56.3	57.17	31.2092	.2422	- -
	17	Polaris, S. P.	5	127 24 57.8	61.4	59.6	56.9	60.5	58.1	59.05	26.4002	.4911	29.810
	18	Nadir, 13h. 40m.	6	359 59 58.4	60.4	61.5	57.2	59.6	56.2	58.88d	30.6530	.6530	
	19	Mercury, centre	6	236 34 58.8	58.5	61.1	58.1	60.0	60.8	59.55	31.6640	.6641	29.776
	20	Venus, N. L.	5	240 14 59.1	61.1	61.0	60.3	60.6	62.3	60.73	33.7380	.7497	29.754
	21	Venus, S L.	5	- - - -	- -	- -	- -	- -	- -	- -	31.5326	.5376	- -
	22	α Lyræ	5	180 14 57.9	60.4	61.6	56.2	59.0	56.9	58.67	31.6620	.6602	- -
	23	Nadir, 18h. 45m	6	359 59 58.2	58.8	61.2	55.8	58.3	55.7	58.00d	30.6379	.6379	
	24	B. A. C., 7018	5	247 59 53.6	52.9	55.9	54.0	54.6	56.4	54.57	32.6656	.6885	29.710
	25	Weisse XX, 849	5	228 59 53.0	51.8	55.2	52.3	53.1	55.4	53.47	30.3170	.3162	29.710
	26	Anonymous, 20h. 38m	5	229 24 52.2	51.3	54.8	51.7	52.6	55.4	53.00	26.1158	.1186	- -
	27	Anonymous, 20h. 38m.	2	- - - -	- -	- -	- -	- -	- -	- -	33.8015	.8209	- -
	28	Arg. Z. N., 187.74, S P.	5	102 4 53.8	57.3	55.0	54.5	55.1	54.5	55.03	31.6898	.7086	29.710
	29	Moon, S L.	10	233 14 53.6	52.7	55.3	52.5	52.5	54.9	53.58	28.0479	27.9715	29.710
	30	Nadir, 21h. 20m.	6	359 59 53.6	54.8	57.5	52.9	54.0	51.0	53.97d	30.5794	.5794	- -
13	31	Polaris, S. P.	5	127 24 52.9	57.4	55.1	53.4	54.7	51.8	54.22	26.3722	.3731	- -
14	32	Sun, N L.	5	226 54 51.8	55.0	54.8	54.6	52.1	54.7	53.83	29.3564	.3844	30.132
	33	Nadir, 13h. 50m	6	359 59 51.4	53.9	56.2	51.8	52.6	47.8	52.28d	30.5504	.5503	
	34	Mercury, N. L	5	237 29 50.8	50.0	53.3	50.8	52.2	52.1	51.53	30.8352	.8757	30.110
	35	Mercury, S. L.	5	- - - -	- -	- -	- -	- -	- -	- -	30.7550	.7818	- -
	36	Venus, N. L.	5	240 49 50.0	51.7	52.1	50.6	51.9	52.2	51.42	31.9938	.9980	30.104
	37	Venus, S. L.	5	- - - -	- -	- -	- -	- -	- -	- -	31.7444	.7522	- -
	38	α Lyræ	5	180 14 50.3	52.6	53.9	48.5	52.5	49.2	51.17	31.5408	.5368	- -
	39	Nadir, 18h. 50m.	6	359 59 49.2	48.8	52.3	45.2	50.8	45.8	48.68d	30.4919	.4914	
	40	Weisse XIX, 315	5	229 19 47.7	45.3	50.9	45.2	50.8	49.3	48.20	32.0702	.0800	30.090
	41	B. A. C., 6841	5	249 44 47.5	45.2	49.6	46.2	49.2	47.9	47.60	30.0992	.1007	30.092
	42	B. A. C., 6899	5	248 59 49.2	47.3	52.5	48.1	51.5	50.3	49.82	32.3084	.3085	30.098
	43	B. A. C., 6977	5	248 54 49.0	47.7	52.5	48.3	51.0	50.7	49.87	31.1932	.1943	30.102
	44	Arg. Z. N., 187.74, S. P.	5	102 4 49.1	51.2	50.3	47.9	51.3	49.2	49.83	31.5534	.5620	30.110
	45	Radcliffe, 2396, S. P.	5	105 9 49.4	53.4	52.6	50.5	52.9	51.9	51.78	29.6454	.6570	30.112
	46	Arg. Z. N., 176.26, S. P.	5	104 59 49.0	52.7	52.8	49.1	53.0	50.2	51.13	33.7118	.7205	30.112
	47	Nadir, 22h. 0m.	6	359 59 50.1	50.8	54.1	48.5	51.2	47.2	50.32d	30.5302	.5300	
	48	Moon, S. L.	10	223 4 49.0	48.5	51.0	47.8	48.3	48.6	48.87	29.1242	.0640	30.106
	49	81 Aquarii	5	226 39 49.4	49.5	51.8	48.7	49.5	50.8	49.95	30.0044	.0060	- -
	50	Weisse XXII, 1203	5	226 19 50.4	49.3	52.1	49.0	49.2	51.7	50.28	32.0922	.0928	- -
	51	Weisse XXIII, 88	5	225 59 50.9	49.3	52.5	48.8	48.2	51.3	50.17	33.3866	.3853	- -
	52	φ Aquarii	5	225 39 51.2	50.8	54.5	51.1	50.3	52.3	51.70	30.5062	.5090	30.108
	53	Nadir, 23h. 20m.	6	359 59 50.1	51.9	54.2	49.8	51.7	47.5	50.87d	30.5386	.5384	
	54	Weisse XXIII, 613	5	220 39 50.7	50.2	53.0	48.9	51.6	50.0	50.73	29.1652	.1672	- -
	55	Weisse XXIII, 783	5	219 24 51.8	51.6	54.8	51.0	53.0	54.0	52.70	32.6420	.6428	30.110
	56	Neptune	5	220 19 52.9	52.6	55.8	51.9	53.8	52.3	53.22	31.2724	.2710	30.108
	57	Weisse, O. 229	5	206 54 53.1	51.8	55.3	52.0	51.5	51.2	52.48	32.8252	.8250	- -
	58	Weisse, O. 233	5	- - - -	- -	- -	- -	- -	- -	- -	29.4920	.4793	- -
	59	45 Piscium	5	211 59 52.7	52.6	54.6	51.2	52.1	52.4	52.60	33.2924	.2899	30.104
	60	Nadir, 0h. 45m	6	359 59 51.8	54.0	56.3	52.2	53.1	49.0	52.73d	30.5688	.5688	

PIER THERMOMETERS.

Refer'e No.	U.	L.	N.	S.	In.	Refer'e No.	U.	L.	N.	S.	In.
	°	°	°	°	°		°	°	°	°	°
5	64.4	64.3	64.4	64.3	62.5	18	63.8	63.0	62.4	63.0	63.4
8	66.0	65.0	65.5	66.0	62.6	23	62.8	62.8	62.9	62.3	62.9
11	66.5	66.3	66.2	66.6	63.0	30	60.8	60.5	60.4	59.6	63.0
14	65.0	65.0	65.3	65.2	63.5	33	60.0	59.5	59.8	59.4	57.3

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Number.	THERM'S. At.	THERM'S. Ex.	Mic. zero.	CORRECTIONS FOR— Micrometer.	CORRECTIONS FOR— Object.	Corrected Reading.	Observed Declination.	Reduct'n to 1860.0.	Observer.	REMARKS.
	°	°	r.	′ ″	′ ″	° ′ ″	° ′ ″	″		
1	- -	57.0	30.6842	+ 13.03	+ 1 6.30	229 1 21.46	−10 7 42.21	− 29.15	H.	
2	- -	- -	.6848	+ 4 35.66	1 7.48	229 30 45.09	10 37 5.84	29.70		
3	63.1	56.7	.6848	− 3 28.82	+ 1 7.16	229 22 40.29	10 29 1.04	29.78		
4	63.8	69.2	30.6760	+ 1 1.76	− 15 11.98	226 5 49.11	7 12 9.86	- -	-	Observed through clouds; limb steady and well defined.
5										
6	65.0	69.3	.6649	− 28.35	+ 1 16.94	236 5 46.79	17 12 5.12	- -	-	Observed semi-diameter = 2″. 42.
7	- -	- -	- - -	− 33.19	1 16.94	236 5 41.95				
8										
9	66.0	68.7	- - -	+ 2 39.24	1 29.67	239 54 5.18	−21 0 33 74	- -	-	Observed semi-diameter = 7″. 80.
10	- -	- -	- - -	+ 2 54.57	1 29.95	239 54 20.79				
11										
12	- -	- .	.6668	− 57.94	+ 0.24	180 13 57.42	+38 39 41.83	22.19		
13	66.0	63.6	.6722	− 1 17.49	− 62 1.64	236 41 36.09	−17 47 56.84			
14										
15	62.0	59.0	30.6703	+ 1 29.15	+ 16 57.81	226 28 24.94	− 7 34 45.69			
16	- -	- -	- - -	− 35.96	− 1 13.99	127 28 7.22	+88 34 28.23	42.31		
17	61.3	59.0	- - -	+ 4 22.67	− 1 13.99	127 28 7.73				
18										
19	63.6	61.0	- - -	− 1 2.47	+ 1 19.29	236 35 16.37	−17 41 37.12			
20	65.0	62.9	- - -	3 13.56	1 31.38	240 13 18.55	−21 19 46.10	- -	-	Observed semi-diameter = 6″. 80
21	- -	- -	- - -	3 0.23	1 31.65	240 13 32.15				
22	- -	- -	- - -	1 2.23	0.24	180 13 56.68	+38 39 42.57	22.12		
23										
24	61.0	55.6	.6753	− 2 6.51	2 19.94	248 0 7.97	−29 6 28.72	19.91		
25	61.0	55.2	- - -	+ 22.57	1 5.59	229 1 21.63	10 7 42.38	29.09		
26	- -	- -	- - -	+ 4 46.41	1 6.75	229 30 46.16	10 37 6.91	29.63		
27	- -	- -	- - -	− 3 17.70	+ 1 6.43	229 22 41.73	−10 29 2.48	− 29.71		
28	60.5	55.0	- - -	− 1 4.94	− 4 20.67	101 59 29.42	+63 5 50.17	+ 38.56		
29	60.3	54.3	- - -	+ 2 49.95	58 58.12	232 18 45.41	−13 25 6.16			
30										
31	- -	60.6	30.6731	4 30.27	− 1 14.57	127 28 9.92	+88 34 30.67	− 43.09		
32	59.5	60.5	- - -	+ 1 21.00	+ 17 0.33	227 13 15.16	− 8 19 35.91			
33										
34	61.5	64.0	- - -	− 12.74	1 22.59	237 31 1.38	18 37 25.08	- -	-	Observed semi-diameter = 2″. 95.
35	- -	- -	- - -	6.84	1 22.59	237 31 7.28				
36	63.5	64.0	- - -	1 23.28	1 34.69	240 50 2.83	−21 56 31.43	- -	-	Observed semi-diameter = 7″. 85.
37	- -	- -	- - -	1 7.83	1 34.94	240 50 18.53				
38	- -	- -	.6715	54.39	0.24	180 13 57.02	+38 39 42.23	21.91		
39										
40	62.0	57.0	.6841	− 1 27.74	1 6.90	229 19 27.36	−10 25 48.11	15.57		
41	61.0	55.9	- - -	+ 36.67	2 35.24	249 47 59.51	30 54 20.26	14.61		
42	61.0	55.8	- - -	− 1 42.10	2 29.06	249 0 36.78	30 6 57.53	16.36		
43	60.8	55.3	- - -	32.07	+ 2 28.78	248 56 46.58	−30 3 7.33	− 18.37		
44	60.2	55.1	- - -	− 55.18	− 4 24.12	101 59 30.53	+63 5 51.28	+ 38.85		
45	59.4	54.6	- - -	+ 1 4.55	3 30.69	105 7 25.64	66 13 46.39	45.25		
46	59.2	54.5	- - -	− 3 10.85	3 33.62	104 53 6.66	+65 59 27.41	+ 45.86		
47										
48	58.5	53.7	- - -	+ 1 41.84	− 51 33.83	222 14 56.88	− 3 21 17.63			
49	- -	- -	- - -	+ 42.62	+ 1 1.47	226 41 34.04	7 47 51.79	− 45.75		
50	- -	- -	- - -	− 1 28.54	1 0.70	226 19 22.44	7 25 43.19	46.04		
51	- -	- -	- - -	− 2 49.78	59.96	225 58 0.35	7 4 21.10	46.70		
52	58.2	53.3	- - -	+ 11.00	59.38	225 41 2.08	6 47 22.83	46.82		
53										
54	- -	52.9	- - -	+ 1 35.34	49.95	220 42 16.02	1 48 36.77	48.85		
55	57.8	52.9	- - -	− 2 3.11	47.69	219 23 37.28	0 29 58.03	49.32		
56	57.4	52.6	- - -	36.89	49.14	220 20 5.47	− 1 26 26.22			
57	- -	- -	- - -	− 2 14.56	29.49	206 53 7.41	+12 0 31.84	51.00		
58	- -	- -	- - -	+ 1 15.73	29.56	206 56 37.77	11 57 1.48	50.99		
59	57.0	52.3	- - -	− 2 43.78	+ 36.29	211 57 45.11	+ 6 55 54.14	− 50.48		
60										

PIER THERMOMETERS.

Refer'e No.	U.	L.	N.	S.	In.	Refer'e No.	U.	L.	N.	S.	In.
	°	°	°	°	°		°	°	°	°	°
39	61.2	61.1	61.2	61.9	58.0	53	57.2	57.8	57.6	56.9	58.5
47	58.4	58.4	58.6	58.0	58.4	60	56.6	57.0	56.8	55.9	58.4

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DATE.	Number.	OBJECT.	No. of mic. readings.	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Correct'd.	Barometer.
1861.				° ′ ″	″	″	″	″	″	″	r.	r.	in.
Oct. 14	1	Polaris	10	130 19 52.1	55.5	53.5	53.0	53.0	51.9	53.17	30.3289	.3230	30.101
	2	Polaris, S. P.	5	127 29 51.9	54.0	52.3	49.9	53.7	51.4	52.20	31.1248	.1530	- -
	3	Polaris, S. P.	5	127 24 49.9	52.6	49.9	48.8	51.6	49.8	50.43	26.3400	.3410	30.184
15	4	Sun, N. L.	5	227 19 49.9	52.2	52.8	51.0	51.7	54.3	51.98	32.0466	.0423	- -
	5	Sun, S. L.	5	227 49 49.5	50.8	52.0	49.6	50.3	53.5	50.95	29.9000	.9205	30.180
	6	Nadir, 14*h.*	6	359 59 48.8	49.3	52.1	46.9	50.2	46.4	48.95*d*	30.4940	.4935	
	7	Mercury, N. L.	5	237 54 49.0	45.1	50.5	45.0	50.2	49.9	48.28	29.5952	.5991	30.160
	8	Mercury, S. L.	5	- - - -	- -	- -	- -	- -	- -	- -	29.5224	.5218	- -
	9	Venus, N. L.	5	241 4 49.5	47.6	50.0	46.3	51.1	51.7	49.37	29.5198	.5216	30.158
	10	Venus, S. L.	5	- - - -	- -	- -	- -	- -	- -	- -	29.2948	.2945	- -
	11	Nadir, 21*h.* 40*m.*	6	359 59 49.8	49.0	51.8	45.0	51.6	48.0	49.20*d*	30.5112	.5108	
	12	Weisse XXI, 1333	3	229 24 47.8	45.2	48.0	44.7	49.5	51.7	47.82	29.2117	.2167	30.170
	13	Weisse XXII, 467	5	227 59 47.8	47.0	49.4	45.0	49.2	51.3	48.28	30.6284	.6296	30.164
	14	Weisse XXII, 641	5	227 29 47.8	47.5	49.1	45.2	49.3	51.3	48.37	31.1782	.1783	- -
	15	α Piscis Australis	5	249 9 48.2	45.3	50.2	47.2	49.6	51.2	48.62	28.3322	.3391	- -
	16	81 Aquarii	5	226 39 49.5	48.6	49.7	47.3	49.6	52.8	49.58	29.9766	.9790	- -
	17	Weisse XXII, 1203	5	226 19 47.9	45.9	47.9	45.0	46.6	51.0	47.38	32.0276	.0289	- -
	18	Weisse XXIII, 88	5	225 59 48.8	46.3	47.8	45.9	46.0	51.2	47.67	33.3250	.3242	- -
	19	φ Aquarii	5	225 39 48.0	47.6	49.2	47.1	47.0	51.3	48.37	30.4398	.4434	30.174
	20	Moon, S. L.	12	217 49 47.2	46.3	47.9	45.8	48.2	49.9	47.55	31.2377	.1853	30.178
	21	Weisse XXIII, 783	5	219 24 50.5	49.5	51.2	48.4	51.5	54.4	50.92	32.6084	.6086	- -
	22	Anonymous, 23*h.* 47.7*m.*	5	219 54 49.2	48.0	49.9	46.7	49.9	51.8	49.25	29.9616	.9629	- -
	23	Neptune	5	220 19 48.5	46.9	49.7	46.1	49.5	49.4	48.35	30.6108	.6113	30.180
	24	Weisse, O. 229	5	206 54 50.5	48.9	51.1	48.0	49.5	50.4	49.73	32.7648	.7645	- -
	25	Weisse, O. 233	2	- - - -	- -	- -	- -	- -	- -	- -	29.4675	.4513	- -
	26	45 Piscium	5	211 59 50.8	50.5	51.3	48.5	50.5	52.5	50.68	33.2550	.2528	30.180
	27	Nadir, 0*h.* 35*m.*	6	359 59 49.4	49.6	52.3	46.5	51.0	47.3	49.35*d*	30.5133	.5129	
	28	Polaris	10	130 19 48.4	51.2	49.0	47.0	51.1	48.8	49.25*d*	30.2749	.2441	30.172
18	29	Nadir, 19*h.* 45*m.*	6	14 59 59.3	58.0	60.2	50.9	60.0	56.9	57.55*d*	30.3450	.3436	- -
	30	B. A. C., 7216	5	259 19 55.6	49.8	54.0	48.3	55.0	57.6	53.38	29.2276	.2392	29.820
	31	Anonymous, 20*h.* 58.6*m.*	5	257 34 56.0	50.5	54.9	50.0	56.0	60.0	54.57	27.5680	.5686	- -
	32	B. A. C., 7327	5	- - - -	- -	- -	- -	- -	- -	- -	31.3364	.3447	29.822
	33	B. A. C., 7436	5	258 19 58.6	54.2	57.8	52.0	57.9	61.8	57.65	33.5222	.5228	- -
	34	B. A. C., 7467	5	259 39 59.0	53.9	58.0	52.6	58.2	62.1	57.30	30.9142	.9173	29.818
	35	Radcliffe, 2396, S. P.	5	120 9 57.9	56.8	56.0	51.3	59.3	59.0	56.72	29.5596	.5683	29.822
	36	Arg., Z. N., 176. 26, S. P.	5	119 59 57.8	56.9	56.2	50.4	59.8	59.0	56.68	33.6246	.6330	29.828
	37	Weisse XXI, 1333	5	244 24 58.8	55.1	58.2	52.8	56.7	61.8	57.23	28.0360	.0384	29.830
	38	Nadir, 22*h.* 10*m.*	6	14 59 61.2	60.8	62.3	54.0	62.8	60.3	60.23*d*	30.3845	.3833	
	39	Weisse XXII, 467	5	242 59 59.6	55.4	59.0	51.9	58.5	61.9	57.72	30.4482	.4484	29.830
	40	Weisse XXII, 641	5	242 29 58.7	55.5	58.2	51.6	58.0	61.5	57.25	30.9950	.9966	- -
	41	Weisse XXII, 900	5	241 29 59.8	55.4	58.8	53.1	59.0	61.9	58.00	29.4818	.4811	- -
	42	α Piscis Australis	5	264 9 59.5	56.1	60.6	53.1	59.5	61.5	58.38	28.0960	.0983	- -
	43	α Ursæ Majoris, S. P.	5	116 29 41.6	41.0	39.9	35.8	44.0	42.9	40.87	32.2616	.3007	29.836
	44	Neptune	5	235 19 61.4	59.0	63.0	57.1	60.5	65.6	61.10	28.8258	.8278	29.840
	45	Weisse, O. 491	5	225 49 61.9	59.1	61.7	56.9	59.8	64.5	60.65	34.1970	.1952	29.842
	46	Weisse, O. 820	5	235 24 62.3	59.3	64.0	58.0	61.0	66.6	61.87	30.1692	.1687	29.840
	47	Polaris	10	145 19 61.5	61.2	61.1	55.1	63.0	64.6	61.08*d*	30.2130	.2059	29.832
	48	Nadir, 0*h.* 30*m.*	6	14 59 61.2	62.2	63.0	55.4	62.6	59.7	60.68*d*	30.3929	.3916	
	49	Moon, N. L.	5	217 54 61.1	59.1	61.8	56.2	60.7	63.2	60.35	25.0260	.1285	29.840
23	50	Sun, S. L.	5	245 44 59.5	59.9	61.3	58.8	60.1	64.9	60.75	31.7458	.7771	29.796
	51	Nadir, 14*h* 10*m.*	6	14 59 61.0	63.4	64.2	57.1	62.8	60.3	61.47*d*	30.4099	.4087	
	52	Venus, N. L.	5	258 4 61.1	60.0	63.1	60.0	61.7	64.5	61.73	30.7436	.7496	29.826
	53	Venus, S. L.	5	- - - -	- -	- -	- -	- -	- -	- -	30.5130	.5179	- -
	54	α Lyræ	10	195 14 61.5	63.4	62.2	59.3	60.2	61.6	61.37	31.4155	.4033	- -
	55	Nadir, 18*h.* 50*m.*	6	14 59 61.0	63.4	63.9	58.0	62.6	59.0	61.32*d*	30.4046	.4035	
	56	B. A. C., 6831	5	257 14 60.8	61.4	63.8	61.1	61.5	64.0	62.10	28.1068	.1081	29.892
	57	B. A. C., 6899	5	263 54 60.6	60.5	64.7	60.2	61.5	62.6	61.68	27.4472	.4482	- -
	58	B. A. C., 6977	5	- - - -	- -	- -	- -	- -	- -	- -	31.1190	.1210	29.930
	59	Nadir, 20*h.* 20*m.*	6	14 59 61.1	65.4	65.6	60.7	63.0	59.0	62.47*d*	30.4354	.4345	
	60	B. A. C., 7170	5	261 34 62.3	62.5	64.1	61.7	60.9	63.3	62.47	29.3600	.3973	29.942

PIER THERMOMETERS.

Refer'e No.	U.	L.	N.	S.	In.	Refer'e No.	U.	L.	N.	S.	In.
6	61°.8	60°.5	61°.0	61°.5	56°.3	48	67°.5	66°.4	67°.3	67°.7	65°.5
11	61.5	60.9	62.0	62.5	59.0	51	61.0	60.5	61.0	61.0	58.4
27	60.1	59.0	59.3	60.2	59.9	55	58.9	58.5	59.2	58.2	58.8
29	69.6	68.0	69.5	71.1	64.7	59	55.9	56.6	57.0	54.8	58.6
38	68.3	67.3	68.6	69.0	65.0						

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Number.	THERM'S. At.	THERM'S. Ex.	Mic. zero.	CORRECTIONS FOR— Micrometer.	CORRECTIONS FOR— Object.	Corrected Reading.	Observed Declination.	Reduct'n to 1860.0.	Observer.	REMARKS.
	°	°	r.	′ ″	′ ″	° ′ ″	° ′ ″	″		
1	56.8	51.3	30.6841	+ 22.70	− 1 8.57	130 19 7.30	+88 34 31.95	− 43.27	H.	
2	- -	- -	30.6693	− 30.40	1 14.06	127 28 7.74	+88 34 28.83	43.46		
3	60.0	64.9	- - -	+ 4 32.05	− 1 14.06	127 28 8.42				
4	- -	- -	- - -	− 1 26.29	+ 55.19	227 19 20.88	− 8 41 48.35	- -	-	Observed semi-diameter = 16′ 6″.72.
5	61.0	65.9	- - -	+ 47.07	56.30	227 51 34.32				
6										
7	64.7	69.6	- - -	1 7.27	1 23.12	237 57 18.67	19 3 41.85	- -	-	Observed semi-diameter = 2″.43.
8	- -	- -	- - -	1 12.13	1 23.12	237 57 23.53				
9	66.5	70.2	- - -	1 12.13	1 34.78	241 7 36.28	22 14 4.29	- -	-	Observed semi-diameter = 7″.25.
10	- -	- -	- - -	1 26.40	1 35.02	241 7 50.79				
11										
12	62.3	56.0	.6826	1 32.14	1 7.52	229 27 27.48	10 33 48.23	39.96		
13	61.8	56.8	- - -	+ 3.33	1 4.08	228 0 55.69	9 7 16.44	42.82		
14	- -	56.9	- - -	− 31.16	1 2.95	227 30 20.16	8 36 40.91	43.72		
15	- -	56.0	- - -	+ 2 27.30	2 31.18	249 14 47.10	30 21 7.85	39.32		
16	- -	- -	- - -	+ 44.22	1 1.30	226 41 35.10	7 47 55.85	45.70		
17	- -	- -	- - -	− 1 24.62	1 0.52	226 19 23.28	7 25 44.03	45.98		
18	- -	- -	- - -	− 2 46.03	59.78	225 58 1.42	7 4 22.17	46.63		
19	61.0	56.0	- - -	+ 15.03	+ 59.19	225 41 2.59	− 6 47 23.34	46.74		
20	60.6	55.3	- - -	− 31.60	− 47 31.32	217 1 44.63	+ 1 51 54.62			
21	- -	55.1	- - -	− 2 1.06	+ 47.58	219 23 37.44	− 0 29 58.19	49.29		
22	- -	55.1	- - -	+ 45.23	48.51	219 56 22.99	1 2 43.74	49.40		
23	60.3	55.1	- - -	+ 4.49	49.02	220 20 41.86	− 1 27 2.61			
24	- -	- -	- - -	− 2 10.85	29.40	206 53 8.28	+12 0 30.97	51.03		
25	- -	55.0	- - -	+ 1 17.40	29.48	206 56 36.61	11 57 2.64	51.02		
26	60.2	54.8	- - -	− 2 41.53	+ 36.19	211 57 45.34	6 55 53.91	50.46		
27										
28	59.5	53.7	- - -	+ 27.58	− 1 8.38	130 19 8.45	+88 34 30.80	43.63		
29	- -	- -	- - -	- - -	- - -	- - - -	- - - -	- -	-	Oct. 16. Moved telescope forward so that nadir-reading = 15°.
30	70.0	69.5	30 3810	1 11.77	+ 1 55.37	259 23 0.52	−25 29 21.27	24.78		
31	- -	- -	- - -	+ 2 56.77	1 47.26	257 39 38.60	23 45 59.35	27.86		
32	70.0	68.7	- - -	− 1 0.57	1 46.96	257 35 40.96	23 42 1.71	28.06		
33	- -	- -	- - -	3 17.48	1 50.44	258 18 30.01	24 24 50.76	30.34		
34	70.0	67.6	- - -	− 33.72	+ 1 57.36	259 41 20.94	−25 47 41.69	− 30.49		
35	69.7	67.5	- - -	+ 51.07	− 3 22.74	120 7 25.05	+66 13 45.80	+ 46.12		
36	69.6	67.5	- - -	− 3 24.41	− 3 26.04	119 53 6.23	+65 59 26.98	+ 46.75		
37	69.5	67.7	- - -	+ 2 27.23	+ 1 5.25	244 28 29.71	−10 34 50.46	− 39.78		
38										
39	69.2	66.2	- - -	− 4.24	1 2.19	243 0 55.67	9 7 16.42	42.62		
40	- -	66.4	- - -	− 38.70	1 1.06	242 30 19.61	8 36 40.36	43.51		
41	- -	- -	- - -	+ 56.55	59.01	241 31 53.56	7 38 14.31	44.76		
42	- -	66.5	- - -	+ 2 23.47	+ 2 26.35	264 14 48.20	−30 21 8.95	− 38.84		
43	69.0	66.1	- - -	− 2 0.67	− 4 28.95	116 23 11.25	+62 29 32.00	+ 48.56		
44	68.5	65.6	- - -	+ 1 37.61	+ 47.50	235 22 26.21	− 1 28 46.96			
45	68.2	65.6	- - -	− 3 59.74	33.42	225 46 34.33	+ 8 7 4.92	− 50.35		
46	68.0	65.0	- - -	+ 13.34	+ 47.85	235 26 3.06	− 1 32 23.81	48.86		
47	68.0	65.3	- - -	11.00	− 1 6.05	145 19 6.03	+88 34 33.22	44.68		
48										
49	67.8	64.7	- - -	+ 5 30.14	5 47.52	217 54 42.97	+15 58 56.28			
50	60.5	64.5	30.3853	− 1 27.48	− 15 5.83	245 28 27.44	−11 34 48.19	- -	-	Observed through clouds.
51										
52	61.0	58.5	- - -	22.90	+ 1 44.43	258 6 23.26	−24 12 51.37	- -	-	Observed semi-diameter = 7″.35.
53	- -	- -	- - -	8.34	1 44.58	258 6 37.97				
54	- -	- -	.3825	− 1 4.16	0.24	195 13 57.45	+38 39 41.80	21.33		
55										
56	56.0	50.5	.4024	+ 2 24.20	1 49.96	257 19 16.26	−23 25 37.01	16.86		
57	- -	49.5	- - -	+ 3 5.68	2 30.06	264 0 37.42	30 6 58.17	16.14		
58	55.8	49.0	- - -	− 45.17	2 29.81	263 56 46.32	30 3 7.07	18.11		
59										
60	55.5	47.3	30.4024	+ 1 3.15	+ 2 14.28	261 38 19.90	−27 44 40.65	− 23.06		

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DATE.	Number.	OBJECT.	No. of mic. readings.	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Correct'd.	Barometer.
1861.				° ′ ″	″	″	″	″	″	″	r.	r.	in.
Oct. 23	1	B. A. C., 7214	5	261 34 62.3	62.5	64.1	61.7	60.9	63.3	62.47	28.6670	.7252	29.952
	2	Anonymous, 20h. 58.6m.	5	257 34 61.2	60.0	64.0	61.8	60.6	64.0	61.93	27.7984	.8017	- -
	3	B. A. C., 7327	5	- - - -	- -	- -	- -	- -	- -	- -	31.5638	.5722	- -
	4	61¹ Cygni	5	195 49 61.0	63.2	63.1	62.5	58.3	61.3	61.57	31.4146	.4031	- -
	5	Lacaille, 8764	5	275 24 59.8	60.2	64.0	58.9	60.9	60.1	60.65	29.4584	.4749	29.970
	6	θ² Microscopii	5	- - - -	- -	- -	- -	- -	- -	- -	31.4590	.4618	29.970
	7	B. A. C., 7523	5	258 59 59.3	58.0	62.5	59.1	58.6	60.8	59.72	34.4372	.4370	29.970
	8	B. A. C., 7620	5	244 49 58.7	60.1	62.9	60.0	57.4	61.8	60.15	30.4450	.4457	- -
	9	B. A. C., 7652	5	257 24 57.6	57.1	61.3	58.3	57.0	59.7	58.50	31.7146	.7212	- -
	10	11 Piscis Australis	5	262 9 58.8	58.6	61.9	58.0	57.7	60.0	59.17	31.6628	.6754	- -
	11	Weisse XXI, 1375	5	243 44 58.5	58.8	62.3	58.6	57.0	60.3	59.25	31.6792	.6810	29.970
	12	Weisse XXII, 13	4	243 19 58.4	58.9	61.2	57.9	56.6	60.3	58.88	29.4468	.4542	- -
	13	Nadir, 22h. 15m.	6	14 59 61.0	66.7	66.1	63.0	62.3	58.9	63.00d	30.4554	.4546	
	14	Weisse XXII, 675	5	242 9 61.6	63.0	64.4	63.0	60.2	63.6	62.63	28.7720	.7747	29.976
	15	Weisse XXII, 900	5	241 29 60.5	61.1	63.0	62.1	59.5	62.5	61.45	29.6256	.6269	29.982
	16	Lalande, 44823	5	254 49 59.0	59.1	63.4	61.0	57.9	61.0	60.23	35.8004	.8050	- -
	17	Lalande, 44877	5	- - - -	- -	- -	- -	- -	- -	- -	27.9020	.9048	- -
	18	Anonymous, 22h. 54.4m.	5	- - - -	- -	- -	- -	- -	- -	- -	31.4366	.4499	29.986
	19	Weisse XXII, 1272	5	239 24 58.5	58.9	62.7	60.0	59.0	61.5	60.10	31.4726	.4719	- -
	20	Weisse XXII, 1283	5	- - - -	- -	- -	- -	- -	- -	- -	31.2942	.2955	29.990
	21	Weisse XXIII, 340	5	228 24 57.5	57.3	62.7	59.3	57.2	60.8	59.13	28.4159	.4121	- -
	22	Anonymous, 23h. 30 2m.	4	235 44 62.4	64.7	69.0	65.9	62.6	65.7	65.05	28.9112	.9141	30.002
	23	Anonymous, 23h. 47.7m.	5	234 54 60.2	63.1	65.0	63.0	59.4	63.2	62.32	29.9004	.9020	30.002
	24	Weisse XXIII, 1201	5	221 49 60.0	60.9	63.8	62.0	59.1	61.2	61.17	33.6952	.6947	- -
	25	Weisse XXIII, 1212	5	- - - -	- -	- -	- -	- -	- -	- -	31.2382	.2328	- -
	26	B. A. C., 41	5	274 59 58.5	62.0	64.3	61.0	61.0	59.3	61.02	29.1224	.1314	30.014
	27	Nadir, 0h. 15m.	6	14 59 59.9	66.5	65.1	64.4	61.0	58.3	62.53d	30.4463	.4454	
	28	Weisse, O. 491	4	225 49 60.5	63.1	63.9	63.9	58.2	61.9	61.92	34.2895	.2821	30.016
	29	Weisse, O. 820	5	235 24 60.5	63.1	66.3	65.1	60.2	63.9	63.18	30.2910	.2901	30.024
	30	Polaris	10	145 19 60.6	65.0	63.0	61.7	61.4	61.6	62.22d	30.2316	.2099	30.024
	31	Polaris, S. P.	8	142 29 59.1	60.6	61.0	60.4	58.2	59.2	59.75d	30.9163	.9190	30.252
	32	Nadir, 13h. 35m.	4	14 59 58.0	62.5	63.2	59.3	59.6	56.6	59.87	30.3995	.3993	
24	33	Sun, N. L.	6	245 29 60.0	62.5	63.4	62.6	59.4	62.1	61.67	28.3862	.3988	30.250
	34	Nadir	6	14 59 53.6	57.7	57.4	54.6	55.3	51.5	55.02d	30.3236	.3213	
	35	Mercury, centre	2	255 49 57.1	57.4	60.6	58.8	57.0	59.3	58.37	29.3975	.4125	30.264
	36	Nadir, 15h. 50m.	5	14 59 58.8	61.9	61.6	58.2	60.0	56.9	59.57d	30.3979	.3958	
	37	Venus, N. L.	3	258 14 61.0	61.5	64.6	62.6	62.5	63.6	62.63	28.9630	.9650	- -
	38	Venus, S. L.	3	- - - -	- -	- -	- -	- -	- -	- -	28.6783	.6876	- -
	39	Venus, centre	2	- - - -	- -	- -	- -	- -	- -	- -	28.7640	.8086	30.262
	40	Nadir, 17h. 50m.	6	14 59 60.0	63.3	63.8	59.0	60.9	56.8	60.63d	30.4118	.4107	- -
	41	α Lyræ	10	195 14 60.6	61.8	61.7	59.1	58.2	59.1	60.08d	31.4180	.4048	- -
	42	Nadir, 22h. 30m.	6	14 59 63.6	67.4	67.9	64.6	63.2	61.8	64.75d	30.4828	.4813	- -
	43	Weisse XXII, 1049	3	240 19 59.0	59.6	61.4	60.8	59.0	60.1	59.98	32.4287	.4272	30.413
	44	b Piscium	4	229 14 55.0	54.3	57.2	55.6	54.8	56.0	55.48	30.2778	.2722	30.422
	45	Santini, 1635	5	239 14 52.9	51.4	55.4	52.9	53.8	54.0	53.40	35.4720	.4720	30.424
	46	B. A. C., 8272	5	226 24 54.0	54.9	58.0	55.7	54.0	56.4	55.50	31.2690	.2628	30.429
	47	ω Piscium	4	227 49 53.0	53.9	56.9	53.3	53.3	55.3	54.28	33.3335	.3277	- -
	48	γ Pegasi	5	219 29 55.9	56.3	60.0	55.1	55.6	56.3	56.53	32.3156	.3003	30.434
	49	Nadir, 0h. 28m.	6	14 59 58.2	62.8	62.1	60.1	59.0	57.5	59.95d	30.4037	.4016	
	50	66 Piscium	6	269 14 61.0	63.0	65.4	62.0	63.6	61.8	62.80	32.3520	.3596	- -
	51	Polaris	11	145 19 56.2	58.7	58.6	55.9	57.4	57.7	57.42d	30.1278	.1220	30.440
	52	Nadir, 12h. 45m.	6	14 59 59.4	62.8	63.5	59.2	59.8	56.5	60.20d	30.4024	.4012	- -
	53	Polaris, S. P.	10	142 29 59.4	62.7	62.1	60.6	60.2	61.1	61.02d	30.8844	.8884	30.608
25	54	Sun, S. L.	5	246 24 60.6	61.6	63.2	63.3	60.6	64.1	62.23	30.3742	.3671	- -
	55	Sun, N. L.	5	245 54 59.4	60.6	61.5	61.5	59.2	63.2	60.90	32.4148	.4256	30.580
	56	Nadir, 14h. 15m.	6	14 59 59.8	62.8	63.2	59.0	60.6	57.5	60.48d	30.4001	.3989	
27	57	Nadir, 13h.	4	14 59 61.8	64.9	65.9	60.6	62.8	58.8	62.47d	30.4412	.4404	
	58	Polaris, S. P.	10	142 29 62.2	65.5	64.9	63.1	63.5	63.6	63.80d	30.8595	.9083	30.210
28	59	Sun, N. L.	5	246 54 59.3	60.0	60.8	61.9	59.4	62.3	60.62	31.4854	.5004	30.178
	60	Mercury, centre	5	256 24 58.0	57.8	60.8	59.2	58.7	60.5	59.17	32.1434	.1553	30.139

PIER THERMOMETERS.

Refer'e No.	U.	L.	N.	S.	In.	Refer'e No.	U.	L.	N.	S.	In.
	°	°	°	°	°		°	°	°	°	°
13	53.8	55.1	55.2	52.1	58.3	42	[illegible].0	52.2	52.4	50.8	55.0
27	53.3	52.0	54.3	50.1	57.8	49	52.3	51.5	51.8	50.1	- -
34	56.2	55.0	54.8	55.0	55.0	52	53.7	53.1	53.0	53.3	53.0
36	57.0	55.9	55.5	56.1	- -	[illegible]6	55.0	54.8	54.6	54.9	53.0
40	56.2	55.8	55.9	56.0	54.6	57	54.5	52.0	53.3	52.6	55.4

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Number.	THERM'S. At.	THERM'S. Ex.	Mic. zero.	CORRECTIONS FOR— Micrometer.	CORRECTIONS FOR— Object.	Corrected Reading.	Observed Declination.	Reduct'n to 1860.0.	Observer.	REMARKS.
	°	°	r.	′ ″	′ ″	° ′ ″	° ′ ″	″		
1	55.5	47.0	30.4024	+ 1 45.39	+ 2 14.48	261 39 2.34	−27 45 23.09	− 23.87	H.	
2	- -	- -	- - -	+ 2 43.44	1 52.68	257 39 38.05	23 45 58.80	27.58		
3	- -	- -	- - -	− 1 13.55	1 52.37	257 35 40.75	−23 42 1.50	27.74		
4	- -	- -	- - -	− 1 2.92	0.83	195 48 59.48	+38 4 39.77	52.09		
5	55.7	46.3	- - -	+ 58.27	5 34.89	275 31 33.81	−41 37 54.56	23.28		
6	55.5	46.1	- - -	− 1 6.61	5 33.88	275 29 27.92	41 35 48.67	24.06		
7	55.2	45.9	- - -	4 13.61	1 59.36	258 57 45.47	25 4 6.22	31.78		
8	- -	45.7	- - -	2.74	1 9.45	244 51 6.86	10 57 27.61	38.21		
9	- -	- -	- - -	1 22.91	1 51.81	257 25 27.40	23 31 48.15	34.70		
10	- -	- -	- - -	1 20.03	2 18.39	262 10 57.53	28 17 18.28	33.18		
11	54.8	45.4	- - -	− 1 20.43	1 6.83	243 44 45.65	9 51 6.40	40.07		
12	- -	- -	- - -	+ 59.58	1 5.96	243 22 4.42	9 28 25.17	40.41		
13										
14	54.5	45.0	- - -	1 42.30	1 3.41	242 12 48.34	8 19 9.09	43.59		
15	54.5	44.6	- - -	+ 48.74	1 1.98	241 31 52.17	7 38 12.92	44.64		
16	- -	- -	- - -	− 5 39.58	1 40.56	254 46 1.21	20 52 21.96	41.25		
17	- -	- -	- - -	+ 2 36.96	1 41.12	254 54 18.31	21 0 39.06	41.38		
18	54.3	44.5	- - -	− 1 5.84	1 40.89	254 50 35.28	20 56 56.03	41.73		
19	- -	- -	- - -	1 7.22	57.60	239 24 50.48	5 31 11.23	46.37		
20	54.2	44.5	- - -	− 56.13	57.61	239 25 1.58	− 5 31 22.33	46.42		
21	- -	- -	- - -	+ 2 5.10	38.93	228 27 43.16	+ 5 25 56.09	49.76		
22	54.0	43.8	- - -	1 33.55	50.84	235 47 29.44	− 1 53 50.19	48.60		
23	53.8	43.4	- - -	+ 31.46	49.38	234 56 23.16	− 1 2 43.91	49.17		
24	- -	- -	- - -	− 3 26.92	29.80	221 47 4.05	+12 6 35.20	51.61		
25	- -	- -	- - -	− 52.18	29.85	221 49 38.84	+12 4 0.41	51.59		
26	53.3	43.3	- - -	+ 1 19.90	5 24.32	275 6 45.24	−41 13 5.99	41.38		
27										
28	53.0	42.8	- - -	− 4 3.84	35.20	225 46 33.28	+ 8 7 5.97	50.51		
29	52.8	43.3	- - -	+ 7.07	+ 50.30	235 26 0.55	− 1 32 21.30	48.78		
30	52.3	42.2	- - -	+ 12.11	− 1 9.65	145 19 4.68	+88 34 34.57	46.65		
31	52.0	51.2	30.4010	− 32.56	− 1 16.30	142 28 10.89	+88 34 31.64	46.73	He.	
32										
33	54.0	51.8	- - -	+ 2 5.84	+ 17 12.41	245 49 19.92	−11 55 40.67			
34										
35	54.3	53.0	- - -	1 2.13	1 36.45	255 52 36.95	21 58 57.70			
36										
37	- -	- -	- - -	1 30.26	1 48.05	258 18 20.94				
38	- -	- -	- - -	1 47.69	1 48.17	258 18 38.54	−24 24 50.83	- -	-	Observed semi-diameter = 8″.80.
39	55.5	53.0	- - -	+ 1 40.09	1 48.05	258 18 30.77				
40	- -	- -	- - -	- - -	- - -	- - - -	- - - -	- -	H.	
41	- -	- -	30.4007	− 1 3.11	0.24	195 13 57.21	+38 39 42.04	21.22		
42	- -	- -	- - -	- - -	- - -	- - - -	- - - -	- -	He.	
43	49.6	41.0	30.4040	− 2 7.17	1 0.72	240 18 53.53	− 6 25 14.28	45.44		
44	49.7	40.4	- - -	+ 8.28	41.00	229 15 44.76	+ 4 37 54.49	49.42		
45	49.5	40.2	- - -	− 5 18.55	58.47	239 10 33.32	− 5 16 54.07	47.45		
46	49.0	39.9	- - -	53.99	36.81	226 24 38.32	+ 7 29 0.93	50.76		
47	- -	- -	- - -	3 3.76	38.87	227 47 29.39	6 6 9.86	50.61		
48	48.3	39.0	- - -	1 59.18	27.52	219 28 24.87	+14 25 14.38			
49										
50	- -	- -	- - -	− 2 2.92	+ 3 31.29	269 16 31.17	−35 22 51.92	42.69		
51	47.4	37.7	- - -	+ 17.72	− 1 11.62	145 19 3.52	+88 34 35.73	46.96		
52	- -	- -	- - -	- - -	- - -	- - - -	- - - -	- -	H.	
53	53.0	54.0	30.3946	− 31.04	− 1 16.77	142 28 13.21	+88 34 33.96	47.26	-	Observed through clouds; faint and very unsteady.
54	- -	- -	- - -	+ 1.73	+ 1 6.99	246 26 10.95	−12 16 25.67	- -	-	Observed semi-diameter = 16′ 6″.03.
55	54.2	54.5	- - -	− 2 7.66	+ 1 5.65	245 53 58.89				
56										
57										
58	52.0	45.4	30.4011	31.88	− 1 17.06	142 28 14.86	+88 34 35.61	− 48.38		
59	53.8	47.6	30.3782	1 10.53	+ 17 17.42	247 11 7.51	−13 17 28.26	- -	He.	
60	53.4	49.9	30.3782	− 1 51.70	+ 1 38.24	256 24 45.71	−22 31 6.46			

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DATE.	Number.	OBJECT.	No. of mic. readings.	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Correct'd.	Barometer.
1861.				° ′ ″	″	″	″	″	″	″	r.	r.	in.
Oct. 28	1	Nadir	4	14 59 60.9	65.2	64.4	60.8	62.9	60.0	62.37*d*	30.4179	.4159	- -
	2	Venus, S. L	3	258 59 61.8	60.5	64.0	60.3	62.0	63.3	61.98*d*	32.1347	.1337	- -
	3	Venus, N. L.	3	- - - -	- -	- -	- -	- -	- -	- -	32.3668	.3911	30.115
	4	Nadir, 18*h*. 0*m*.	6	14 59 60.6	62.9	63.4	58.5	61.3	57.7	60.73*d*	30.4094	.4083	- -
	5	α Lyræ	10	195 14 61.5	63.5	62.8	60.0	59.7	61.2	61.45*d*	31.4124	.3990	- -
	6	A Capricorni	5	259 24 59.6	58.6	61.3	60.1	58.3	60.8	59.78	30.4668	.4850	30.066
	7	Lacaille, 8764	5	275 24 59.5	59.8	62.4	59.2	59.4	59.3	59.93	29.5034	.5058	- -
	8	θ^2 Microscopii	5	- - - -	- -	- -	- -	- -	- -	- -	31.5006	.5032	30.058
	9	Lacaille, 8824	5	278 29 60.6	60.2	63.0	59.0	59.5	59.9	60.37	33.8208	.8269	- -
	10	Nadir, 21*h*. 30*m*.	6	14 59 60.9	65.0	65.8	62.3	61.9	58.6	62.42*d*	30.4398	.4389	
	11	Lalande, 44823	5	254 49 61.6	62.8	66.6	64.8	61.2	64.2	63.53	35.8996	.9029	- -
	12	Lalande, 44877	5	- - - -	- -	- -	- -	- -	- -	- -	28.0022	.0051	- -
	13	Anon., 22*h*. 54.4*m*.	5	- - - -	- -	- -	- -	- -	- -	- -	31.4908	.4987	30.040
	14	Nadir, 23*h*. 10*m*.	6	14 59 61.2	66.4	66.0	65.0	61.5	59.6	63.28*d*	30.4592	.4584	
	15	Weisse XXIII, 340	2	228 34 60.5	62.5	64.8	60.2	60.4	63.4	61.97	38.6545	.0444	- -
	16	Santini, 1633	5	- - - -	- -	- -	- -	- -	- -	- -	31.5846	.5834	- -
	17	Santini, 1635	5	- - - -	- -	- -	- -	- -	- -	- -	33.0984	.0955	30.034
	18	Weisse XXIII, 817	5	235 24 60.5	63.4	66.7	65.0	61.0	63.9	63.42	31.1458	.1455	- -
	19	Weisse XXIII, 830	5	- - - -	- -	- -	- -	- -	- -	- -	30.3890	.3878	- -
	20	Weisse XXIII, 916	5	- - - -	- -	- -	- -	- -	- -	- -	28.4054	.4046	30.028
	21	Weisse XXIII, 1201	5	221 49 60.1	61.6	63.4	62.3	59.3	61.6	61.38	33.7164	.7169	- -
	22	Weisse XXIII, 1212	5	- - - -	- -	- -	- -	- -	- -	- -	31.2540	.2492	30.020
	23	Weisse, O. 202	5	221 14 59.2	60.9	64.0	63.0	60.0	60.1	61.20	30.1180	.1155	- -
	24	Weisse, O. 436	5	224 54 58.6	62.3	62.6	62.4	58.4	60.0	60.72	32.0124	.0078	- -
	25	Weisse, O. 510	5	226 39 59.1	63.1	64.0	63.1	59.1	60.8	61.53	33.1984	.1960	30.008
	26	Nadir, 0*h*. 45*m*.	2	14 59 59.1	65.4	64.3	64.0	59.8	57.6	61.70	30.4405	.4396	
	27	Nadir, 0*h*. 45*m*.	3	55.5	61.9	60.8	59.7	57.0	53.6	58.08	30.3818	.3805	
	28	Polaris	10	145 19 60.5	66.0	63.9	64.0	62.1	62.3	63.13*d*	30.2419	.2384	29.986
	29	Nadir, 12*h*. 45*m*.	6	14 59 58.6	61.4	63.1	58.8	58.7	55.1	59.28*d*	30.4037	.4025	
	30	Polaris, S. P.	10	142 29 57.8	60.8	60.9	59.9	58.2	59.2	59.47*d*	30.8800	.8837	29.880
29	31	Sun, N. L.	5	247 14 56.5	55.6	58.3	58.8	56.2	58.7	57.35	31.5584	.5536	- -
	32	Sun, S. L.	5	247 44 49.1	49.1	51.2	52.0	50.4	52.0	50.63	29.2310	.2458	29.840
	33	Nadir, 14*h*. 40*m*	6	14 59 57.5	59.1	60.6	55.8	56.4	54.4	57.30*d*	30.3688	.3675	
	34	Mercury, centre	5	256 24 58.5	58.6	61.6	60.1	58.2	62.6	59.93	30.0274	.0296	29.792
	35	Venus, S. L.	5	259 4 60.7	58.9	61.2	59.9	60.5	64.1	60.88	28.5332	.5392	- -
	36	Venus, N. L.	5	- - - -	- -	- -	- -	- -	- -	- -	28.7836	.7936	29.736
	37	Nadir, 18*h*. 0*m*.	6	14 59 59.0	58.6	61.0	54.1	58.8	56.0	57.92*d*	30.3792	.3779	
	38	α Lyræ	10	195 14 58.0	57.0	57.4	54.0	55.4	57.7	56.58*d*	31.3467	.3342	- -
	39	Nadir, 22*h*. 50*m*.	6	14 59 60.2	63.3	63.4	58.0	61.8	58.7	60.90*d*	30.4105	.4086	- -
	40	c^1 Piscium	4	225 44 61.8	60.1	63.6	60.1	59.9	64.0	61.58	33.7018	.6973	29.600
	41	Weisse, O. 202	2	221 14 52.7	54.7	59.5	53.6	57.3	58.6	56.07	30.0385	.0290	29.588
	42	Nadir, 0*h*. 45*m*.	4	14 59 56.2	58.3	58.8	54.8	57.5	54.8	56.73*d*	30.3689	.3667	
	43	Polaris	10	145 19 57.0	57.7	57.4	53.0	58.3	58.6	57.00*d*	30.2003	.1937	29.570
30	44	Nadir, 18*h*. 0*m*.	6	14 59 59.6	59.1	61.8	52.8	60.6	57.5	58.57*d*	30.3852	.3839	- -
	45	α Lyræ	5	195 14 57.1	57.2	56.9	53.0	56.8	58.3	56.55*d*	31.3513	.3332	- -
	46	Nadir, 14*h*. 0*m*.	4	14 59 57.3	60.1	60.9	55.8	59.5	55.8	58.23*d*	30.3781	.3756	- -
31	47	Sun, S. L.	6	248 24 59.5	57.9	62.8	58.0	61.2	61.2	60.10	30.1440	.1496	30.056
	48	Nadir	3	14 59 61.6	64.6	63.7	58.6	63.5	61.6	62.27*d*	30.4397	.4379	
	49	Venus, S. L.	4	259 24 57.0	54.5	57.9	52.8	57.6	58.2	56.33	33.0615	.0735	- -
	50	Venus, N. L.	4	- - - -	- -	- -	- -	- -	- -	- -	33.3448	.3585	30.062
	51	Nadir, 18*h*. 15*m*.	6	14 59 59.0	60.8	62.2	54.6	61.3	56.5	59.07*d*	30 3859	.3846	- -
	52	α Lyræ	10	195 14 58.2	59.6	58.9	55.2	58.6	58.1	58.10*d*	31.3574	.3473	- -
	53	Nadir, 22*h*. 45*m*.	4	14 59 59.2	63.8	64.0	58.7	61.8	57.5	60.83*d*	30.4186	.4166	- -
	54	Weisse XXII, 1272	2	239 24 61.8	62.3	64.7	64.3	63.7	65.8	63.77	31.5050	.5034	30.150
	55	Weisse XXII, 1283	2	- - - -	- -	- -	- -	- -	- -	- -	31.3025	.3100	- -
	56	Weisse XXIII, 342	6	220 9 58.1	59.3	61.9	59.0	59.5	61.1	59.82	30.7787	.7718	30.155
	57	Weisse XXIII, 730	3	235 24 61.0	61.6	65.3	62.7	61.6	64.6	62.80	34.2337	.2320	- -
	58	Anon., 23*h*. 38*m*. ±	3	- - - -	- -	- -	- -	- -	- -	- -	34.9123	.9129	- -
	59	Weisse XXIII, 817	2	- - - -	- -	- -	- -	- -	- -	- -	31.1315	.1307	30.160
	60	Weisse XXIII, 1039	3	234 49 62.3	63.1	65.2	62.8	61.1	65.3	63.30	33.8630	.8642	30.162

PIER THERMOMETERS.

Refer'e No.	U.	L.	N.	S.	In.	Refer'e No.	U.	L.	N.	S.	In.
	°	°	°	°	°		°	°	°	°	°
1	57.3	55.2	55.2	56.3	55.0	26	48.5	47.5	48.4	45.6	54.0
4	56.1	54.8	55.3	55.4	55.2	29	52.0	50.8	50.4	51.2	50.3
10	51.7	50.8	51.2	49.8	55.0	33	54.5	53.2	53.5	54.4	50.3
14	50.2	48.4	49.7	47.1	54.2	37	57.0	55.1	56.5	57.5	51.0

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Number.	THERM'S. At.	THERM'S. Ex.	Mic. zero.	CORRECTIONS FOR— Micrometer.	CORRECTIONS FOR— Object.	Corrected Reading.	Observed Declination.	Reduct'n to 1860.0.	Observer.	REMARKS.
	°	°	r.	′ ″	′ ″	° ′ ″	° ′ ″	″		
1	- -	- -	- - -	- - -	- - -	- - - -	- - - -	- -	He.	
2	- -	- -	30.3782	— 1 50.34	+ 1 51.41	259 0 3.05	—25 6 15.66	- -	-	Observed semi-diameter = 8″. 14.
3	55.5	51.3	- - -	2 6.52	1 51.31	258 59 46.77				
4	- -	- -	- - -	- - -	- - -	- - - -	- - - -	- -	H.	
5	- -	- -	30.3967	1 3.00	0.24	195 13 58.69	+38 39 40.56	— 20.64		
6	50.3	44.3	.3982	— 5.45	2 2.77	259 26 57.10	—25 33 17.85	26.76		
7	- -	43.4	.3990	+ 56.14	5 37.82	275 31 33.89	41 37 54.64	22.93		
8	49.8	43.5	.3992	— 1 9.39	5 38.11	275 29 28.65	41 35 49.40	23.63		
9	- -	43.4	.3995	3 35.42	7 57.91	278 34 22.86	44 40 43.61	23.45		
10										
11	- -	- -	.4047	— 5 45.59	1 41.46	254 45 59.40	20 52 20.15	40.80		
12	- -	- -	.4048	+ 2 30.83	1 42.11	254 54 16.47	21 0 37.22	40.88		
13	47.0	41.2	.4051	— 1 8.75	1 41.82	254 50 36.60	—20 56 57.35	41.24		
14										
15	- -	- -	.4064	8 0.08	39.30	228 27 41.19	+ 5 25 58.06	49.81		
16	- -	- -	.4066	1 13.97	39.48	228 34 27.48	5 19 1[illegible].77	49.90		
17	46.3	40.2	.4067	2 49.00	39.44	228 32 52.41	+ 5 20 46.84	49.95		
18	- -	- -	.4078	— 46.37	50.68	235 25 7.73	— 1 31 28.48	48.85		
19	- -	- -	.4078	+ 1.25	50.70	235 25 55.37	1 32 16.12	48.86		
20	46.0	39.5	.4080	+ 2 5.88	50.77	235 28 0.07	— 1 34 20.82	48.94		
21	- -	- -	.4089	— 3 27.93	30.07	221 47 3.52	+12 6 35.73	51.81		
22	45.6	39.3	.4089	— 52.82	30.13	221 49 38.69	12 4 0.56	51.85		
23	- -	39.0	.4096	+ 18.48	29.42	221 15 49.10	12 37 50.15	51.76		
24	- -	- -	.4105	— 1 40.40	34.29	224 53 54.61	8 59 44.64	50.87		
25	44.8	38.5	.4107	— 2 55.07	+ 36.73	226 37 43.19	7 15 56.06	50.47		
26										
27										
28	44.0	37.8	.4131	+ 10.98	— 1 10.23	145 19 3.88	88 34 35.37	48.56		
29										
30	50.5	52.5	30.4122	— 29.64	— 1 15.18	142 28 14.65	+88 34 35.40	48.75		
31	- -	- -	- - -	— 1 11.75	+ 1 6.95	247 14 52.55	—13 37 23.16	- -	-	Observed semi-diameter = 16′ 9″. 86.
32	54.0	56.3	- - -	+ 1 13.30	1 8.34	247 47 12.27				
33										
34	56.1	58.9	- - -	24.03	1 35.23	256 26 59.19	22 33 19.94	- -	-	Very unsteady.
35	- -	- -	- - -	1 57.71	1 48.51	259 8 47.10	—25 14 59.80	- -	-	Observed semi-diameter = 8″. 04.
36	58.0	60.5	- - -	+ 1 41.72	1 48.41	259 8 31.01				
37										
38	- -	- -	.4110	— 58.03	0.24	195 13 58.79	+38 39 40.46	20.50		
39	- -	- -	- - -	- - -	- - -	- - - -	- - - -	- -	He.	
40	51.5	46.0	30.4065	— 3 26.84	34.40	225 42 9.14	8 11 30.11	51.49		
41	51.1	46.2	- - -	+ 23.73	+ 28.56	221 15 48.36	12 37 50.89	55.31		
42										
43	50.4	45.1	- - -	+ 13.37	— 1 8.21	145 19 2.16	88 34 37.09	48.81		
44	- -	- -	- - -	- - -	- - -	- - - -	- - - -	- -	H.	
45	- -	- -	30.4067	— 58.23	+ 0.24	195 13 58.56	+38 39 40.69	20.36	-	Observed through clouds.
46	- -	- -	- - -	- - -	- - -	- - - -	- - - -	- -	He.	
47	57.2	54.9	30.4029	+ 15.92	— 14 58.89	248 10 17.13	—14 16 37.88			
48										
49	- -	- -	- - -	— 2 47.86	+ 1 51.86	259 24 0.33	—25 30 12.09	- -	-	Observed semi-diameter = 8″. 99.
50	57.8	56.5	- - -	3 5.77	1 51.78	259 23 42.34				
51	- -	- -	- - -	- - -	- - -	- - - -	- - - -	- -	H.	
52	- -	- -	30.3994	59.58	0.24	195 13 58.76	+38 39 40.49	20.24		
53	- -	- -	- - -	- - -	- - -	- - - -	- - - -	- -	He.	
54	51.7	44.2	30.4065	1 8.94	57.96	239 24 52.79	— 5 31 13.54	45.82		
55	- -	- -	- - -	56.79	58.00	239 25 4.98	— 5 31 25.73	45.87		
56	- -	43.9	- - -	22.96	27.85	220 10 4.71	+13 43 34.54	51.76		
57	- -	- -	- - -	4 0.45	50.36	235 21 52.71	— 1 28 13.46	48.51		
58	- -	- -	- - -	4 43.24	50.33	235 21 9.89	1 27 30.64	48.54		
59	51 4	43.8	- - -	45.52	50.45	235 25 7.73	1 31 28.48	48.60		
60	51.1	43.1	30.4065	— 3 37.33	+ 51.18	234 47 17.15	— 0 53 37.90	— 48.92		

PIER THERMOMETERS.

Refer'e No.	U.	L.	N.	S.	In.	Refer'e No.	U.	L.	N.	S.	In.
	°	°	°	°	°		°	°	°	°	°
39	55.4	51.8	- -	- -	52.1	48	59.0	56.0	57.3		
42	53.1	51.4				51	57.4	56.0	57.0	57.6	53.8
44	58.5	57.0	58.5	59.3	52.2	53	53.8	52.8	52.6	52.7	54.0
46	57.5	55.3	56.0	56.8	53.4						

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DATE.	Number.	OBJECT.	No. of mic. readings.	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Correct'd.	Barometer.
1861.				° ′ ″	″	″	″	″	″	″	r.	r.	in.
Oct. 31	1	Weisse, O. 436	3	224 54 61.0	61.4	62.5	61.1	59.0	62.8	61.30	31.9863	.9819	30.176
	2	Nadir, 0h. 45m.	4	14 59 56.5	60.9	60.8	56.2	58.8	54.6	57.97d	30.3794	.3773	
	3	Polaris	13	145 19 56.2	58.8	57.8	55.0	59.0	57.8	57.43d	30.1748	.1666	30.189
	4	Nadir, 13h. 0m.	6	14 59 59.1	63.0	62.8	56.1	61.4	56.2	59.77a	30.3904	.3892	- -
	5	Polaris, S. P.	10	142 29 59.2	62.0	60.5	59.0	61.2	60.9	60.47d	30.8110	.8452	30.248
	6	Nadir, 14h. 10m.	6	14 59 57.3	61.8	61.4	56.2	59.7	54.6	58.50d	30.3741	.3728	
Nov. 1	7	Sun, S. L.	5	248 44 59.6	60.4	63.3	59.9	60.6	60.8	60.77	30.9318	.9292	- -
	8	Sun, N. L.	5	248 14 62.6	63.4	66.2	63.6	65.0	65.0	64.30	33.1278	.1409	30.230
3	9	Polaris, S. P.	10	307 29 61.3	59.6	61.2	58.2	58.3	60.2	59.80d	30.6317	.6500	29.744
	10	Nadir, 13h. 35m.	6	179 59 61.2	63.9	63.1	65.2	59.2	60.7	62.22d	30.2604	.2591	
4	11	Nadir, 22h. 55m.	6	179 59 61.2	60.2	61.9	63.9	63.9	63.2	62.38d	30.4293	.4279	
	12	Weisse XXIII, 48	5	34 34 61.1	59.5	62.4	62.5	65.1	62.3	62.15	28.1016	.1012	- -
	13	Weisse XXIII, 111	5	- - - -	- -	- -	- -	- -	- -	- -	27.5842	.5832	29.866
	14	Weisse XXIII, 359	5	33 34 60.5	60.2	61.5	63.2	66.5	62.4	62.38	29.6558	.6556	- -
	15	Santini, 1633	5	- - - -	- -	- -	- -	- -	- -	- -	31.5422	.5409	29.862
	16	Weisse XXIII, 710	5	32 24 61.6	59.8	61.9	62.3	66.3	62.5	62.40	31.7552	.7561	- -
	17	Santini, 1664	5	31 29 60.4	58.4	61.6	61.5	65.4	62.0	61.55	34.6836	.6837	29.864
	18	Weisse XXIII, 1269	5	26 49 60.0	59.5	62.0	62.7	64.5	60.2	61.48	29.7454	.7459	- -
	19	Weisse, O. 4	5	- - - -	- -	- -	- -	- -	- -	- -	30.0880	.0824	- -
	20	Weisse, O. 69	5	30 29 58.5	56.8	59.8	59.0	63.8	59.8	59.62	29.9102	.9107	29.858
	21	B. A. C., 137	5	29 19 59.1	57.2	60.0	61.0	65.0	60.4	60.45	30.0502	.0492	- -
	22	Weisse, O. 476	5	31 29 60.7	59.0	62.5	62.4	65.9	62.1	62.10	30.7580	.7584	29.858
	23	Nadir, 0h. 40m.	6	179 59 59.4	59.1	60.1	63.9	61.7	61.4	60.93d	30.4134	.4119	
	24	Polaris	10	310 19 60.2	55.5	59.5	57.0	61.2	59.8	58.87d	30.2525	.2205	29.856
5	25	Nadir, 23h.	4	179 59 57.4	56.2	58.4	59.2	61.0	59.0	58.53d	30.3683	.3658	- -
	26	B. A. C., 8184	2	44 9 51.9	48.1	51.9	51.5	56.1	53.6	52.18	30.6225	.6245	29.708
	27	Weisse XXIII, 817	3	40 24 51.0	48.4	51.0	51.9	56.0	53.7	52.00	30.9087	.9099	29.706
	28	c^1 Piscium	3	30 44 58.0	53.3	56.2	57.2	61.7	59.3	57.62	33.6303	.6286	29.700
6	29	Polaris, S. P.	10	307 29 60.3	56.4	60.1	56.5	64.0	61.7	59.83	30.7844	.7956	29.904
	30	Nadir, 13h. 40m.	6	179 59 60.6	60.4	61.4	63.0	64.4	62.4	62.03d	30.4197	.4182	
7	31	Sun, S. L.	5	55 34 61.0	58.6	61.7	65.3	65.9	64.5	62.83	30.6286	.6264	- -
	32	Sun, N. L.	5	55 4 61.5	59.6	62.3	64.8	67.0	65.4	63.43	32.8638	.8925	29.896
	33	Venus, S. L.	5	64 54 60.8	58.3	60.8	63.9	65.3	64.2	62.22	32.0352	.0418	- -
	34	Venus, N. L.	5	- - - -	- -	- -	- -	- -	- -	- -	32.3252	.3282	29.904
	35	Nadir	6	179 59 60.1	58.4	60.6	62.0	63.4	61.6	61.02d	30.4044	.4029	
	36	α Lyræ	10	0 14 61.4	57.8	61.4	60.9	65.1	61.2	61.30d	31.3824	.3727	- -
	37	Moon, S. L.	12	58 54 59.4	58.3	60.0	63.1	65.7	65.3	61.97	29.3069	.3225	29.924
	38	Weisse XXII, 675	4	47 14 61.1	59.0	61.7	64.2	66.5	62.1	62.43	33.5412	.5444	29.936
	39	Weisse XXII, 995	2	45 19 62.5	62.2	65.0	67.3	68.5	64.1	64.93	30.4090	.4064	29.942
	40	Weisse XXII, 1049	2	- - - -	- -	- -	- -	- -	- -	- -	32.4505	.4487	- -
	41	Weisse XXII, 1057	2	- - - -	- -	- -	- -	- -	- -	- -	33.1650	.1667	29.942
	42	Nadir, 23h. 5m.	3	179 59 57.0	57.3	58.6	61.8	60.4	59.0	59.02d	30.3872	.3847	
	43	B. A. C., 8184	5	44 9 52.6	50.7	52.9	56.6	56.8	54.4	54.00	30.7034	.7056	29.944
	44	Weisse XXIII, 730	3	40 19 52.0	52.0	54.4	57.0	57.2	56.2	54.80	29.3300	.3277	29.944
	45	Weisse XXIII, 767	4	- - - -	- -	- -	- -	- -	- -	- -	32.0268	.0267	- -
	46	Weisse XXIII, 817	2	- - - -	- -	- -	- -	- -	- -	- -	26.2355	.2348	- -
	47	Weisse XXIII, 1267	5	38 59 50.8	49.9	52.6	54.0	57.4	53.1	52.97	32.9568	.9572	29.945
	48	B. A. C., 137	3	29 19 57.8	56.6	59.4	62.7	62.6	59.9	59.83	30.1713	.1648	29.954
	49	Nadir, 0h. 55m.	4	179 59 56.0	57.1	58.2	62.9	59.3	57.6	58.52d	30.3808	.3783	
	50	Polaris	8	310 19 58.6	55.3	60.0	57.3	61.0	58.2	58.40d	30.2170	.2129	29.958
	51	Polaris, S. P.	10	307 29 62.2	61.0	64.2	63.1	65.6	62.8	63.15d	30.7422	.8452	29.944
	52	Nadir, 13h. 45m.	6	179 59 61.0	63.0	64.2	67.8	64.6	61.7	63.72d	30.4600	.4588	
8	53	Sun, N. L.	8	55 19 60.3	59.8	62.9	67.0	65.5	62.9	63.07	30.5282	.5433	29.884
	54	Venus, N. L.	5	64 54 58.6	55.6	58.4	61.7	63.4	62.2	59.98	30.7196	.7289	- -
	55	Venus, S. L.	5	- - - -	- -	- -	- -	- -	- -	- -	30.4490	.4522	29.814
	56	Nadir, 18h. 20m.	6	179 59 61.4	58.8	61.2	62.3	63.6	62.6	61.65d	30.4295	.4281	
	57	α Lyræ	10	0 14 61.8	58.4	62.0	60.9	65.7	61.9	61.78d	31.4042	.3925	- -
	58	Nadir, 20h. 35m.	6	179 59 60.4	57.8	60.8	59.9	63.2	61.6	60.62d	30.4154	.4139	
	59	Moon, S. L.	11	54 39 58.3	55.3	58.4	58.6	64.3	60.1	59.17	30.6501	.6584	29.804

PIER THERMOMETERS.

Refer'e No.	U.	L.	N.	S.	In.	Refer'e No.	U.	L.	N.	S.	In.
	°	°	°	°	°		°	°	°	°	°
2	53.7	52.8	52.8	52.5	53.8	11	53.2	52.6	53.5	52.5	53.5
4	53.3	53.4	52.3	53.2	53.0	23	51.1	50.3	51.4	49.5	53.4
6	54.6	53.7	54.0	54.4	53.0	25	51.5	51.2	51.5	51.0	51.0
10	54.0	53.1	52.3	52.8	52.7	30	52.5	52.2	52.4	52.3	52.2

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Number.	THERM'S. At.	THERM'S. Ex.	Mic. zero.	CORRECTIONS FOR— Micrometer.	CORRECTIONS FOR— Object.	Corrected Reading.	Observed Declination.	Reduct'n to 1860.0.	Observer.	REMARKS.
	°	°	r.	′ ″	′ ″	° ′ ″	° ′ ″	″		
1	51.0	42.7	30.4065	— 1 39.03	+ 34.15	224 53 56.42	+ 8 59 42.83	— 50.75	He.	
2										
3	51.0	41.9	- - -	+ 15.07	— 1 10.08	145 19 2.42	88 34 36.83	49.52		
4	- -	- -	- - -	- -	- - -	- - - -	- - - -	- -	H.	Microscopes illuminated by daylight.
5	52.0	53.0	30.3929	— 28.43	— 1 16.02	142 28 16.02	+88 34 36.77	49.74	-	Microscopes illuminated by daylight. Stars very unsteady.
6										
7	- -	- -	.3967	33.47	+ 1 11.91	248 45 39.21	—14 35 51.48	- -	-	Observed semi-diameter = 16′ 8″.48.
8	54.2	56.6	- - -	— 2 52.48	+ 1 10.43	248 13 22.25				
9	51.5	52.0	30.2238	+ 26.79	— 1 14.91	307 28 18.10	+88 34 38.85	50.79	-	Nov. 2. Moved telescope on circle to nadir-reading 180°; adjusted microscope heads. Nov. 4. Adjusted for level, collimation, and azimuth.
10										
11										
12	- -	- -	30.3936	2 24.09	+ 40.28	34 38 6.52	4 15 32.73	48.77		
13	52.6	47.0	- - -	2 56.64	40.29	34 38 39.08	4 15 0.17	48.91		
14	- -	- -	- - -	+ 46.38	38.78	33 36 27.54	5 17 11.71	49.64		
15	52.5	46.5	- - -	— 1 12.12	38.74	33 34 29.00	5 19 10.25	49.75		
16	- -	46.3	- - -	1 25.64	37.07	32 24 13.83	6 29 25.42	50.40		
17	52.0	46.0	- - -	— 4 29.65	35.72	31 26 7.62	7 27 31.63	50.84		
18	- -	- -	- - -	+ 40.71	29.71	26 51 11.90	12 2 27.35	51.85		
19	- -	- -	- - -	19.57	29.71	26 50 50.76	12 2 48.49	51.84		
20	51.0	43.4	- - -	30.36	34.62	30 31 4.60	8 22 34.65	51.04		
21	- -	- -	- - -	+ 21.65	33.04	29 20 55.14	9 32 44.11	50.88		
22	50.0	43.3	- - -	— 22.91	+ 36.01	31 30 15.20	7 23 24.05	50.43		
23										
24	49.0	43.0	- - -	+ 10.88	— 1 9.15	310 19 0.60	+88 34 38.65	50.98		
25	- -	- -	- - -	- -	- - -	- - - -	- - - -	- -	He.	
26	50.0	46.5	30.3893	— 14.78	+ 56.38	44 10 33.78	— 5 16 54.53	49.80		
27	- -	46.4	- - -	32.72	49.44	40 25 8.72	— 1 31 29.47	48.44		
28	49.9	45.4	- - -	3 23.60	+ 34.56	30 42 8.58	+ 8 11 30.67	51.07		
29	52.0	49.9	30.3863	25.72	— 1 15.61	307 28 18.50	+88 34 39.25	51.87	H.	
30										
31	- -	- -	- - -	15.09	+ 1 17.14	55 36 4.88	—16 26 13.90	- -	-	Observed semi-diameter = 16′ 11″.72.
32	52.0	51.8	- - -	2 37.52	1 15.52	55 3 41.43				
33	- -	- -	- - -	1 44.05	1 54.65	64 55 12.82	—26 1 24.55	- -	-	Observed semi-diameter = 9″.02.
34	53.0	52.3	- - -	2 2.05	1 54.60	64 54 54.77				
35										
36	- -	- -	- - -	— 1 1.99	+ 0.24	0 13 59.55	+38 39 39.70	19.34		
37	53.0	50.2	- - -	+ 1 6.87	— 63 45.76	57 52 23.08	—18 58 43.83			
38	47.5	42.6	30.4011	— 3 17.57	+ 1 3.66	47 12 48.52	8 19 9.27	42.79	He.	
39	47.0	41.7	- - -	2 6.04	59.71	45 18 58.60	6 25 19.35	44.59		
40	- -	- -	- - -	2 8.70	59.71	45 18 55.94	6 25 16.69	44.76		
41	47.0	41.7	- - -	2 53.83	59.68	45 18 10.78	6 24 31.53	45.80		
42										
43	45.5	41.0	- - -	— 19.14	57.49	44 10 32.35	5 16 53.10	49.82		
44	45.2	40.4	- - -	+ 1 7.47	50.36	40 21 52.63	1 28 13.38	48.32		
45	- -	- -	- - -	— 1 42.17	50.28	40 19 2.91	1 25 23.66	48.39		
46	- -	- -	- - -	+ 4 21.87	50.45	40 25 7.12	1 31 27.87	48.41		
47	45.0	39.7	- - -	— 2 40.66	48.00	38 58 0.31	— 0 4 21.06	49.07		
48	44.8	39.4	- - -	+ 14.85	+ 33.41	29 20 48.09	+ 9 32 51.16	50.99		
49										
50	44.2	38.9	- - -	+ 11.83	— 1 10.01	310 19 0.22	88 34 39.03	52.15		
51	53.0	46.0	30.4008	— 27.93	— 1 16.28	307 28 18.94	+88 34 39.69	52.35	H.	
52										
53	53.0	52.6	- - -	8.96	+ 17 27.91	55 37 22.02	—16 43 42.77			
54	- -	- -	- - -	20.62	1 53.09	64 56 32.45	—26 3 1.91	- -	-	Observed semi-diameter = 8″.71.
55	55.0	57.4	- - -	3.23	1 53.12	64 56 49.87				
56										
57	- -	- -	- - -	1 2.33	+ 0.24	0 13 59.69	+38 39 39.56	—19.15		
58										
59	54.5	53.1	30.4043	— 15.97	— 60 36.34	53 39 6.86	—14 45 27.61			

PIER THERMOMETERS.

Refer'e No.	U.	L.	N.	S.	In.	Refer'e No.	U.	L.	N.	S.	In.
	°	°	°	°	°		°	°	°	°	°
35	53.6	53.2	53.0	53.6	52.2	52	47.3	47.2	46.0	46.1	47.5
42	48.3	48.5	49.4	46.6	51.8	56	53.6	53.0	53.2	53.5	47.4
49	48.1	47.0	47.2	45.4	51.6	58	52.6	52.3	52.9	53.5	48.0

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DATE.	Number.	OBJECT.	No. of mic. readings.	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Correct'd.	Barometer.
1861.				° ′ ″	″	″	″	″	″	″	r.	r.	in.
Nov. 8	1	61¹ Cygni	5	0 49 61.5	57.4	61.1	59.3	64.9	62.1	61.05	31.4244	.4118	- -
	2	61² Cygni	5	- - - -	- -	- -	- -	- -	- -	- -	31.3274	.3153	- -
	3	4 Piscis Australis	5	71 34 63.0	59.4	63.2	63.1	68.2	67.1	64.00	29.8250	.8303	29.802
	4	B. A. C., 7523	5	63 54 59.0	55.9	59.2	59.9	64.2	61.5	59.95	29.6256	.6289	29.800
	5	Weisse XXI, 1375	5	48 44 58.2	56.0	58.9	59.1	65.0	61.3	59.75	31.6356	.6380	- -
	6	Weisse XXII, 13	5	48 19 59.9	56.0	59.7	59.6	66.5	62.8	60.75	29.4480	.4488	- -
	7	Weisse XXII, 761	5	46 49 57.9	53.8	58.0	57.0	64.1	59.5	58.38	31.5878	.5886	29.800
	8	Weisse XXII, 962	5	45 44 58.1	55.9	60.4	57.9	64.5	60.2	59.50	32.2790	.2785	- -
	9	Weisse XXII, 1049	5	45 19 57.5	55.2	59.0	57.0	63.3	58.9	58.48	32.3402	.3390	- -
	10	Weisse XXII, 1159	5	27 4 62.9	60.1	63.4	62.1	67.6	63.0	63.18	30.2612	.2587	- -
	11	Weisse XXIII, 48	5	34 39 59.8	57.9	60.9	59.1	64.4	61.5	60.60	32.8298	.8311	- -
	12	Weisse XXIII, 111	5	- - - -	- -	- -	- -	- -	- -	- -	32.3462	.3440	29.788
	13	Weisse XXIII, 359	5	33 34 59.6	58.2	60.5	60.2	66.1	61.8	61.07	29.6226	.6224	- -
	14	θ Piscium	5	33 14 61.8	59.8	61.3	61.5	67.3	63.8	62.58	29.9294	.9295	- -
	15	Weisse XXIII, 458	5	- - - -	- -	- -	- -	- -	- -	- -	32.4474	.4452	29.786
	16	Weisse XXIII, 710	5	32 24 62.3	59.9	61.8	60.5	67.2	63.5	62.53	31.7584	.7594	
	17	Santini, 1664	5	31 24 63.4	60.1	64.0	62.8	69.0	64.7	64.00	29.9816	.9818	29.778
	18	Weisse XXIII, 1269	5	26 54 58.6	57.2	59.7	59.2	64.4	59.4	59.75	34.4938	.4910	- -
	19	Weisse, O. 4	5	- - - -	- -	- -	- -	- -	- -	- -	34.8256	.8229	- -
	20	Weisse, O. 69	5	30 29 57.2	54.8	57.8	55.6	63.4	59.0	57.97	29.8840	.8824	29.776
	21	Weisse, O. 476	5	31 29 59.9	57.4	60.2	59.1	65.7	61.5	60.63	30.7378	.7387	29.772
	22	Nadir, 0*h.* 40*m.*	6	179 59 61.0	59.4	61.1	62.5	64.8	63.4	62.03*d*	30.4382	.4368	
	23	Polaris	10	310 19 60.8	55.5	60.0	54.6	63.6	60.8	59.22*d*	30.3292	.2813	29.760
11	24	61¹ Cygni	5	0 49 58.8	53.6	57.5	55.7	62.2	59.8	57.93	31.3564	.3431	- -
	25	61² Cygni	5	- - - -	- -	- -	- -	- -	- -	- -	31.2664	.2542	- -
	26	4 Piscis Australis	5	71 34 60.0	54.9	58.8	57.8	64.8	65.2	60.25	29.7524	.7575	30.058
	27	α Cephei	5	336 54 60.3	54.2	59.5	52.4	63.7	61.9	58.67	31.7320	.7263	30.060
	28	β Cephei	5	328 54 60.6	54.8	59.8	53.1	63.0	61.4	58.78	28.9000	.8964	30.062
	29	Nadir, 21*h.* 45*m.*	6	179 59 58.8	55.1	58.4	56.0	62.7	60.6	58.60*d*	30.3804	.3788	
	30	Weisse XXI, 1384	5	49 39 59.1	55.5	58.9	57.2	66.1	63.2	60.00	32.8496	.8527	30.092
	31	Moon, S. L.	10	39 19 60.1	57.5	60.0	58.7	66.8	63.9	61.17	30.6861	.6809	30.122
	32	θ Piscium	4	33 14 59.3	56.4	59.0	57.8	65.0	61.4	59.82	29.8972	.8967	- -
	33	Weisse XXIII, 458	5	- - - -	- -	- -	- -	- -	- -	- -	32.4246	.4220	30.124
	34	γ Cephei	5	322 4 58.8	52.5	58.9	52.0	61.7	59.0	57.15	32.9188	.9100	- -
	35	γ Cephei	5	321 59 58.5	51.9	58.1	52.2	62.0	58.9	56.93	28.1464	.1323	30.126
	36	Weisse XXIII, 916	5	40 29 60.8	58.9	61.5	60.6	67.1	64.8	62.28	33.1308	.1312	30.132
	37	Weisse XXIII, 1146	4	40 34 61.4	58.2	61.8	60.4	56.3	64.8	60.48	32.9835	.9850	- -
	38	Neptune	5	- - - -	- -	- -	- -	- -	- -	- -	32.7992	.8011	30 134
	39	B. A. C., 41	5	80 4 59.7	58.1	61.3	59.4	66.3	64.0	61.47	33.7428	.7498	30.138
	40	Nadir, 0*h.* 20*m.*	6	179 59 64.2	62.0	64.4	65.0	67.8	66.1	64.92*d*	30.4869	.4860	
	41	α Cassiopeæ	9	343 4 60.6	54.5	60.0	55.4	63.5	61.2	59.20	28.6296	.6185	30.144
	42	Weisse I, 100	5	29 49 58.5	55.0	58.4	58.0	63.3	60.3	58.92	28.2222	.2196	- -
	43	Weisse I, 113	5	- - - -	- -	- -	- -	- -	- -	- -	30.6560	.6574	30.160
	44	Polaris	10	310 19 58.3	52.6	57.4	52.0	60.6	58.0	56.48*d*	30.2822	.2569	30.158
	45	Weisse I, 607	4	35 4 57.7	55.2	57.2	56.3	60.3	58.1	57.47	30.3435	.3408	- -
	46	Weisse I, 628	3	- - - -	- -	- -	- -	- -	- -	- -	26.6833	.6777	30.154
	47	Anon. 1*h.* 42. 4*m.*	5	25 9 60.2	57.3	59.8	59.1	62.4	59.4	59.70	31.0770	.0720	30.160
	48	Weisse I, 1050	5	24 54 61.5	58.3	61.5	61.2	63.4	60.8	61.12	27.9686	.9684	30.170
	49	Rumker, 568	5	21 34 60.6	57.4	60.2	60.1	64.9	61.5	60.78	28.8228	.8224	30.164
	50	B. A. C., 740	6	317 54 62.8	57.4	61.9	58.0	64.5	63.2	61.30	32.7137	.6954	30.174
	51	Bessel's Zone, 27, 25	5	16 39 62.0	58.8	62.0	60.8	65.0	61.1	61.62	32.5224	.5139	- -
	52	Bessel's Zone, 27, 26	3	- - - -	- -	- -	- -	- -	- -	- -	34.0293	33.9961	30.174
	53	Nadir, 2*h.* 40*m.*	6	179 59 61.8	61.0	62.7	63.6	65.3	63.4	62.97*d*	30.4564	.4552	
	54	β Ursæ Minoris, S. P.	10	293 39 62.8	57.3	62.2	59.5	65.5	63.4	61.78*d*	31.4580	.4658	30.184
	55	Weisse III, 62	5	30 49 63.8	60.5	63.0	63.3	67.3	65.2	63.85	31.8308	.8318	30.194
	56	Nadir, 12*h.* 50*m.*	5	179 59 63.2	63.8	65.5	68.1	66.6	63.3	65.08*d*	30.4938	.4929	
	57	Polaris, S. P.	10	307 29 63.4	60.1	63.1	62.6	65.5	64.2	63.15*d*	30.8282	.8306	30.320
	58	β Ursæ Minoris	10	324 9 63.3	60.2	63.9	62.8	66.5	63.6	63.38*d*	29.2713	.2602	30.308
12	59	Sun, N. L.	5	56 29 62.6	61.1	63.9	66.9	67.1	66.4	64.67	33.5620	.5592	- -
	60	Sun, S. L.	5	56 59 63.1	64.2	65.5	69.0	70.3	68.9	66.83	31.3212	.3324	30.296
	61	Nadir, 15*h.* 35*m.*	6	179 59 62.9	62.8	63.9	66.2	66.0	63.6	64.23*d*	30.4768	.4758	

PIER THERMOMETERS.

Refer'e No.	U.	L.	N.	S.	In	Refer'e No.	U.	L.	N.	S.	In.
	°	°	°	°	°		°	°	°	°	°
22	51.0	51.1	51.5	51.3	48.8	53	52.4	52.2	52.3	52.3	52.4
29	56.2	56.0	56.9	57.2	54.0	56	50.2	49.3	48.7	48.9	51.2
40	53.3	53.0	53.5	53.3	52.4	61	52.4	51.8	51.8	52.5	50.6

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Number.	THERM'S. At.	THERM'S. Ex.	Mic. zero.	CORRECTIONS FOR— Micrometer.	CORRECTIONS FOR— Object.	Corrected Reading.	Observed Declination.	Reduct'n to 1860.0.	Observer.	REMARKS.
	°	°	r.	′ ″	′ ″	° ′ ″	° ′ ″	″		
1	- -	- -	30.4043	— 1 3.32	+ 0.82	0 48 58.55	+38 4 40.70	— 52.48	H.	
2	- -	- -	- - -	— 57.26	0.82	0 49 4.61	+38 4 34.64	52.48		
3	54.3	52.7	- - -	+ 36.08	2 51.24	71 38 31.32	—32 44 52.07	25.30		
4	54.0	51.8	- - -	+ 48.73	1 57.33	63 57 46.01	25 4 6.76	30.78		
5	- -	- -	- - -	— 1 17.55	1 5.74	48 44 47.94	9 51 8.69	39.28		
6	- -	- -	- - -	+ 1 0.05	1 4.88	48 22 5.68	9 28 26.43	39.63		
7	53.0	50.2	- - -	— 1 14.44	1 1.59	46 49 45.53	7 56 6.28	43.16		
8	- -	- -	- - -	1 57.81	59.28	45 44 0.97	6 50 21.72	44.27		
9	- -	- -	- - -	— 2 1.61	58.43	45 18 55.30	— 6 25 16.05	44.75		
10	- -	- -	- - -	+ 9.14	29.60	27 5 41.92	+11 47 57.33	50.56		
11	- -	- -	- - -	— 2 32.54	39.94	34 38 8.00	4 15 31.25	48.78		
12	52.5	49.9	- - -	— 2 1.93	39.96	34 38 38.63	4 15 0.62	48.91		
13	- -	- -	- - -	+ 49.13	38.46	33 36 28.66	5 17 10.59	49.68		
14	- -	- -	- - -	+ 29.83	37.98	33 16 10.39	5 37 28.86	49.85		
15	52.6	49.5	- - -	— 2 8.29	37.92	33 13 32.21	5 40 7.04	49.95		
16	- -	- -	- - -	— 1 25.19	36.75	32 24 14.09	6 29 25.16	50.46		
17	52.0	49.0	- - -	+ 26.54	35.41	31 26 5.95	7 27 33.30	50.91		
18	- -	- -	- - -	— 4 16.88	29.35	26 51 12.22	12 2 27.03	52.03		
19	- -	- -	- - -	— 4 37.73	29.34	26 50 51.36	12 2 47.89	52.03		
20	51.8	48.5	- - -	+ 32.80	34.16	30 31 4.93	8 22 34.32	51.14		
21	51.6	48.6	- - -	— 21.02	+ 35.52	31 30 15.13	7 23 24.12	50.10		
22										
23	51.2	47.9	- - -	+ 7.70	— 1 8.27	310 18 58.65	88 34 40.60	52.54		
24	- -	- -	30.4011	— 59.21	+ 0.81	0 48 59.53	38 4 39.72	52.37		
25	- -	- -	- - -	— 53.62	0.81	0 49 5.12	+38 4 34.13	52.37		
26	60.3	58.3	- - -	+ 40.45	+ 2 50.74	71 38 31.44	—32 44 52.19	25.10		
27	60.3	57.3	- - -	— 1 23.30	— 24.55	336 53 10.82	+62 0 28.43	51.99		
28	60.0	56.8	- - -	+ 1 34.57	— 34.70	328 55 58.65	+69 57 40.60	53.80		
29										
30	58.9	54.9	- - -	— 2 34.09	+ 1 7.95	49 38 33.86	—10 44 54.61	38.77		
31	56.8	52.2	.4078	— 17.18	— 48 48.63	38 30 55.36	+ 0 22 43.89			
32	- -	- -	- - -	+ 32.11	+ 38.24	33 16 10.17	5 37 29.08	49.74		
33	56.2	51.5	- - -	— 2 6.61	+ 38.18	33 13 31.39	5 40 7.86	49.83		
34	- -	- -	- - -	— 2 37.28	— 45.53	322 1 34.34	+76 52 4.87	61.09		
35	56.0	51.1	- - -	+ 2 23.01	— 45.53	322 1 34.41				
36	55.5	50.0	- - -	— 2 51.18	+ 49.87	40 28 0.97	— 1 34 21.72	48.26		
37	- -	- -	- - -	2 41.99	50.03	40 33 8.52	1 39 29.27	48.39		
38	55.0	49.9	- - -	2 30.43	49.85	40 33 19.90	1 39 40.65			
39	54.6	50.0	- - -	— 3 30.06	+ 5 21.32	80 6 52.73	—41 13 13.48	37.62		
40										
41	53.4	52.2	- - -	+ 1 52.46	— 17.70	343 6 33.96	+55 47 5.29	57.78		
42	- -	- -	- - -	+ 2 17.52	+ 33.52	29 52 49.96	9 0 49.29	49.06		
43	52.3	52.0	- - -	— 15.70	+ 33.46	29 50 16.68	9 3 22.57	49.03		
44	52.4	51.3	- - -	+ 9.48	— 1 8.72	310 18 57.24	88 34 42.01	53.56		
45	- -	- -	- - -	4.21	+ 41.11	35 5 42.79	3 47 56.46	46.33		
46	52.3	50.3	- - -	+ 3 54.45	41.20	35 9 33.12	3 44 6.13	46.24		
47	52.3	49.5	- - -	— 41.75	27.54	25 9 45.49	13 43 53.76	46.70		
48	52.0	49.1	- - -	+ 2 33.32	27.32	24 58 1.76	13 55 37.49	45.32		
49	52.1	48.9	- - -	+ 1 39.64	+ 23.26	21 37 3.68	17 16 35.57	44.67		
50	52.0	50.3	- - -	— 2 23.79	— 52.93	317 51 44.58	81 1 54.67	43.39		
51	- -	- -	- - -	2 12.38	+ 17.44	16 38 6.68	22 15 32.57	43.59		
52	49.5	52.2	- - -	3 45.54	+ 17.41	16 36 33.49	22 17 5.76	— 43.57		
53										
54	52.2	51.1	- - -	1 6.50	— 2 12.82	293 36 42.46	74 43 3.21	+ 34.62		
55	52.2	51.0	- - -	1 29.51	+ 34.91	30 49 9.25	8 4 30.00	— 36.47		
56										
57	48.0	48.1	30.4107	— 26.39	— 1 16.95	307 28 19.81	88 34 40.56	— 53.72		
58	51.0	51.8	- - -	+ 1 12.31	— 42.33	324 10 33.36	+74 43 5.89	+ 34.80		
59	- -	- -	- - -	— 3 17.89	+ 1 20.95	56 28 7.73	—17 50 40.47	- -	-	Observed semi-diameter =16′ 12″.00.
60	52.0	52.1	30.4107	— 57.93	+ 1 22.82	57 0 31.72				
61										

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DATE.	Number.	OBJECT.	No. of mic. readings.	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Correct'd.	Barometer.
1861.				° ′ ″	″	″	″	″	″	″	r.	r.	in.
Nov. 12	1	Nadir, 17h. 50m.	6	179 59 61.8	60.4	62.5	63.3	65.1	62.2	62.55d	30.4533	.4521	- -
	2	Venus, S. L.	5	64 54 61.5	58.7	62.4	63.0	66.8	63.0	62.57	31.2022	.2075	30.252
	3	Venus, N. L.	5	- - - -	- -	- -	- -	- -	- -	- -	31.4850	.4889	- -
	4	α Lyræ	10	0 14 63.0	59.1	63.0	62.6	66.2	62.9	62.80d	31.4071	.3942	- -
	5	Nadir, 21h. 50m.	4	179 59 63.4	62.0	64.3	64.8	66.7	63.9	64.18d	30.4789	.4769	- -
	6	Weisse, XXII, 761	5	46 49 68.2	63.9	67.5	68.6	73.6	68.2	68.33	31.7850	.7885	30.228
	7	Weisse, XXII, 1082	4	27 54 61.0	58.3	62.2	61.5	66.2	62.0	61.87	32.0038	.0017	30.226
	8	b Piscium	5	34 14 58.3	55.2	60.0	59.2	62.3	58.9	58.98	30.3552	.3517	30.224
	9	Nadir, 23h. 40m.	4	179 59 55.6	54.8	56.4	58.2	58.8	56.6	56.73d	30.3730	.3705	
	10	Moon, S. L.	2	34 9 41.0	41.3	42.4	42.1	46.8	41.7	42.55	30.4815	.4790	30.207
	11	Nadir, 12h. 50m.	6	179 59 59.8	61.5	62.6	64.8	63.7	60.2	62.10d	30.4438	.4424	- -
	12	Polaris, S. P.	10	307 29 60.1	57.8	60.4	59.4	62.6	61.3	60.27d	30.7415	.7599	30.050
	13	β Ursæ Minoris	10	324 9 60.8	58.6	62.0	60.1	64.9	61.4	61.30d	29.2631	.2312	30.012
13	14	Sun, S. L.	5	57 14 58.5	60.2	61.3	64.4	66.2	65.5	62.68	30.3584	.3547	- -
	15	Sun, N. L.	2	56 44 55.9	54.6	56.2	59.8	61.6	60.1	58.03	32.5225	.5227	30.002
	16	Nadir, 15h. 40m.	6	179 59 59.4	58.7	60.2	61.8	62.2	60.7	60.50d	30.4195	.4180	
	17	Nadir, 17h. 50m.	6	179 59 60.2	57.3	60.6	60.1	63.4	61.6	60.53d	30.4229	.4214	
	18	Venus, N. L.	5	64 54 60.0	55.9	60.2	59.1	65.7	62.0	60.48	33.2694	.2763	- -
	19	Venus, S. L.	5	- - - -	- -	- -	- -	- -	- -	- -	33.0148	.0216	29.926
	20	α Lyræ	10	0 14 60.6	55.8	59.9	58.0	63.8	61.2	59.88d	31.3639	.3527	- -
	21	Nadir, 19h. 0m.	6	179 59 59.6	56.6	58.8	58.4	62.6	61.7	59.62d	30.4039	.4024	
	22	α Cephei	10	336 54 60.5	56.6	59.7	55.5	64.6	62.7	59.93d	31.7705	.7609	29.916
	23	β Cephei	10	328 54 60.2	56.0	59.5	55.0	63.4	61.5	59.27d	28.9577	.9444	29.914
	24	Nadir, 21h. 35m.	6	179 59 59.3	55.2	58.6	56.9	62.3	61.1	58.90d	30.3936	.3920	
	25	Weisse XXI, 1384	5	49 39 60.0	56.1	60.0	57.6	66.6	64.4	60.78	32.8342	.8368	29.902
	26	Weisse XXII, 962	5	45 44 59.1	55.4	60.1	56.7	64.9	61.1	59.55	32.2644	.2636	29.898
	27	Weisse XXII, 1159	5	27 4 59.7	56.3	59.6	57.5	64.9	60.7	59.78	30.2412	.2375	29.900
	28	γ Cephei	5	321 59 61.6	55.0	60.5	54.9	65.2	62.1	59.88	28.2184	.2133	- -
	29	γ Cephei	5	322 4 64.3	57.8	63.7	57.2	67.8	65.2	62.67	33.0662	.0428	29.904
	30	Nadir, 23h. 50m.	6	179 59 62.2	59.4	61.8	60.8	66.2	64.6	62.50d	30.4529	.4517	
	31	Moon, S. L.	11	29 14 62.9	58.8	62.0	62.2	68.6	65.6	63.35	29.7404	.7069	29.910
	32	Nadir, 1h. 0m.	6	179 59 61.6	58.8	61.2	60.8	65.0	63.6	61.83d	30.4435	.4422	
	33	Polaris	10	310 19 60.8	54.2	59.4	53.2	63.9	61.0	58.75d	30.3188	.3151	29.906
	34	Weisse I, 607	3	35 9 60.1	56.6	60.1	58.0	64.7	61.3	60.13	35.1650	.1633	- -
	35	Weisse I, 628	2	- - - -	- -	- -	- -	- -	- -	- -	31.5285	.5213	29.912
	36	Rumker, 568	5	21 34 62.7	59.4	61.5	61.3	67.6	65.0	62.92	28.8434	.8433	29.916
	37	B. A. C., 740	5	317 54 64.1	57.6	62.1	58.0	67.2	65.2	62.37	32.7342	.7339	- -
	38	Bessel Zone, 27, 25	3	16 39 64.6	60.5	64.0	61.6	68.5	64.9	64.02	32.5663	.5413	29.920
	39	Weisse II, 585	5	35 4 64.2	61.5	63.2	62.3	57.6	65.6	62.40	32.7358	.7369	29.918
	40	Nadir, 2h 40m.	6	179 59 60.2	58.2	59.8	60.0	64.0	62.2	60.73d	30.4261	.4247	
	41	β Ursæ Minoris, S. P.	10	293 39 58.6	52.3	57.2	53.9	61.8	60.7	57.42d	31.4152	.4337	29.924
	42	Weisse III, 233	3	28 44 59.8	55.7	59.8	59.3	65.4	61.7	60.28	30.2903	.2784	29.930
	43	Nadir, 12h. 45m.	6	179 59 59.5	58.7	61.0	61.8	63.4	60.7	60.85d	30.4272	.4258	
	44	Polaris, S. P.	10	307 29 60.5	56.4	59.5	57.2	63.6	62.2	59.90d	30.7804	.7978	30.006
15	45	61¹ Cygni	5	0 49 61.9	61.5	64.0	65.9	66.0	62.0	63.55	31.4906	.4797	- -
	46	61² Cygni	5	- - - -	- -	- -	- -	- -	- -	- -	31.3986	.3861	- -
	47	α Cephei	10	336 54 62.4	60.8	64.5	63.2	65.2	62.7	63.13d	31.8364	.8265	29.714
	48	β Cephei	10	328 55 12.1	10.1	14.2	12.4	14.2	11.7	12.45d	29.1809	.1655	29.714
	49	Nadir, 21h. 40m.	6	179 59 61.6	63.0	64.0	67.3	64.8	62.2	63.82d	30.4965	.4956	
16	50	Nadir, 22h. 50m.	4	179 59 60.2	59.0	61.4	62.2	64.0	60.6	61.23d	30.4288	.4264	- -
	51	Weisse XXIII, 342	3	25 9 60.7	57.1	60.9	60.0	62.7	59.1	60.08	30.7810	.7803	29.916
	52	Weisse XXIII, 710	5	32 24 59.4	56.3	59.4	58.9	64.4	59.2	59.60	31.7282	.7271	29.914
	53	B. A. C., 8257	3	- - - -	- -	- -	- -	- -	- -	- -	28.2797	.2718	- -
	54	ω Piscium	4	32 49 60.0	58.0	61.3	59.7	65.8	61.8	61.10	33.4292	.4208	29.917
	55	Polaris	12	310 19 64.0	58.2	63.8	59.3	65.8	62.3	62.24d	30.3394	.3329	29.932
	56	Nadir, 2h. 5m.	5	179 59 55.8	56.0	57.6	59.4	59.9	57.2	57.65d	30.3806	.3781	
	57	Moon, S. L.	8	17 54 58.3	56.6	60.4	60.3	62.9	58.5	59.50	28.9979	.9822	29.954
17	58	Nadir, 12h. 55m.	6	179 59 61.4	61.5	63.4	65.0	65.5	62.2	63.17d	30.4795	.4785	- -
	59	Polaris, S. P.	10	307 29 59.6	55.2	58.9	57.8	62.1	60.6	59.03d	30.6879	.7482	29.960
18	60	Nadir, 18h. 0m	6	179 59 59.0	59.0	60.9	62.6	63.0	59.8	60.72d	30.4402	.4389	

PIER THERMOMETERS.

Refer'e No.	U.	L.	N.	S.	In.	Refer'e No.	U.	L.	N.	S.	In.
1	54°.2	52°.4	52°.8	53°.3	50°.7	16	51°.8	51°.0	51°.0	51°.9	48°.6
5	51.5	50.7	51.0	51.4	50.8	17	54.2	53.0	53.5	54.4	48.8
9	50.0	49.3	49.8	49.0	51.0	21	57.5	55.8	55.7	58.5	49.0
11	48.4	47.8	46.5	47.5	48.9	24	56.0	54.6	55.4	57.5	49.7

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Number.	THERM'S. At.	THERM'S. Ex.	Mic. zero.	CORRECTIONS FOR— Micrometer.	CORRECTIONS FOR— Object.	Corrected Reading.	Observed Declination.	Reduct'n to 1860.0.	Observer.	REMARKS.
	°	°	r.	′ ″	′ ″	° ′ ″	° ′ ″	″		
1	- -	- -	- - -	- - -	- - -	- - - -	- - - -	- -	H.	
2	54.3	54.2	30.4107	— 50.08	+ 1 55.33	64 56 7.82	—26 2 19.71	- -	-	Observed semi-diameter = 8″.86.
3	- -	- -	- - -	1 7.77	1 55.30	64 55 50.10				
4	- -	- -	- - -	1 1.82	0.24	0 14 1.22	+38 39 38.03	— 18.31		
5	- -	- -	- - -	- - -	- - -	- - - -	- - - -	- -	He.	
6	47.8	43.4	30.4164	1 26.24	1 3.32	46 49 45.41	— 7 56 6.16	42.83		
7	47.0	42.5	- - -	— 1 39.64	31.55	27 53 53.78	+10 59 45.47	50.04		
8	46.0	41.8	- - -	+ 4.07	+ 40.64	34 15 43.69	4 37 55.56	49.11		
9										
10	48.0	42.4	- - -	— 3.94	— 44 36.04	33 25 2.57	5 28 36.68			
11	- -	- -	- - -	- - -	- - -	- - - -	- - - -	- -	H.	
12	46.8	47.4	30.4101	— 21.99	1 16.38	307 28 21.90	88 34 42.65	— 54.00		
13	50.0	54.3	- - -	+ 1 14.10	— 41.71	324 10 33.69	+74 43 5.56	+ 35.15	-	Observed through haze; quite unsteady.
14	- -	- -	- - -	+ 3.47	+ 1 22.02	57 16 28.17	—18 6 37.58	- -	-	Observed semi-diameter = 16′ 11″.34.
15	51.0	56.2	- - -	— 2 12.80	1 20.26	56 44 5.49				
16										
17										
18	- -	- -	- - -	3 0.17	1 52.65	64 53 52.96	—26 0 21.72	- -	-	Observed semi-diameter = 8″.02.
19	51.2	58.9	- - -	2 44.16	1 52.67	64 54 8.99				
20	- -	- -	- - -	59.25	+ 0.24	0 14 0.87	+38 39 38.38	— 18.11		
21										
22	56.2	55.1	30.4097	— 1 24.93	— 24.54	336 53 10.46	62 0 28.79	51.94		
23	56.2	54.9	.4098	+ 1 32.11	— 34.64	328 55 56.74	+69 57 42.51	53.81		
24										
25	56.3	54.3	.4102	— 2 32.52	+ 1 7.62	49 38 35.88	—10 44 56.63	38.57		
26	56.0	53.8	.4108	— 1 56.46	59.03	45 44 2.12	— 6 50 22.87	43.85		
27	56.0	54.0	.4109	+ 10.90	+ 29.47	27 5 40.15	+11 47 59.10	50.38		
28	- -	- -	.4113	+ 2 18.16	— 44.95	322 1 33.09	76 52 6.54	61.48		
29	55.6	53.9	.4113	— 2 45.39	44.95	322 1 32.33				
30										
31	54.8	50.9	.4121	+ 44.33	40 32.83	28 35 14.85	10 18 24.40			
32										
33	53.2	51.9	.4124	+ 6.13	— 1 8.07	310 18 56.81	88 34 42.44	54.17		
34	- -	- -	.4127	— 4 58.58	+ 40.59	35 5 42.14	3 47 57.11	46.18		
35	54.3	52.6	.4127	— 1 9.67	40.68	35 9 31.14	3 44 8.11	46.10		
36	54.0	53.0	.4132	+ 1 38.68	+ 22.89	21 37 4.49	17 16 34.76	44.69		
37	- -	- -	.4133	— 2 25.85	— 52.26	317 51 44.26	81 1 54.99	44.02		
38	54.1	52.4	.4133	2 13.75	+ 17.28	16 38 7.55	22 15 31.70	43.66		
39	54.0	52.0	.4134	2 26.04	+ 40.59	35 3 16.95	3 50 22.30	— 40.22		
40										
41	54.0	52.9	.4138	— 1 4 12	— 2 11.20	293 36 42.10	74 43 2.85	+ 35.33		
42	54.1	54.0	.4140	+ 8.52	+ 31.64	28 45 40.44	10 7 58.81	— 35.08	-	Uncertain; star very faint and near the fixed wire.
43										
44	50.3	52.0	30.4123	— 24.23	— 1 15.57	307 28 20.10	88 34 40.85	54.32		
45	- -	- -	30.4348	1 5.68	+ 0.84	0 48 58.71	38 4 40.54	52.20		
46	- -	- -	- - -	59.80	+ 0.84	0 49 4.59	38 4 34.66	52.20		
47	44.0	39.1	- - -	— 1 27.48	— 25.18	336 53 10.47	62 0 28.78	51.95		
48	43.8	39.1	- - -	+ 1 19.77	— 35.54	328 55 56.68	69 57 42.57	53.91		
49										
50	- -	- -	- - -	- - -	- - -	- - - -	- - - -	- -	He.	
51	48.0	38.4	30.4079	— 23.41	+ 27.94	25 10 4.61	13 43 34.64	51.82		
52	47.8	38.3	.4088	— 1 22.86	37.74	32 24 14.48	6 29 24.77	50.12		
53	- -	- -	.4088	+ 2 14.32	37.87	32 27 51.79	6 25 47.46	50.18		
54	47.2	38.0	.4096	— 3 9.26	+ 38.34	32 47 30.18	6 6 9.07	50.22		
55	44.0	37.0	.4130	+ 5.03	— 1 10.22	310 18 57.05	88 34 42.20	55.08		
56										
57	45.8	37.6	.4155	+ 1 30.09	30 51.35	17 25 38.24	21 28 1.01			
58	- -	- -	- - -	- - -	- - -	- - - -	- - - -	- -	H.	
59	45.8	42.5	30.4281	— 20.11	— 1 16.90	307 28 22.02	+88 34 42.77	— 55.58		
60										

PIER THERMOMETERS.

Refer'e No.	U.	L.	N.	S.	In.	Refer'e No.	U.	L.	N.	S.	In.
	°	°	°	°	°		°	°	°	°	°
30	54.6	53.8	54.5	55.3	50.4	49	48.0	46.9	46.8	45.6	51.2
32	53.4	53.0	53.2	53.9	50.6	50	49.2	49.8	49.4	50.7	48.4
40	53.5	53.1	53.5	53.8	51.0	56	49.2	48.5	48.3	47.0	48.0
43	51.8	51.0	50.9	51.4	51.5	60	47.9	47.7	47.3	47.5	47.3

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DATE.	Number.	OBJECT.	No. of mic. readings.	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Correct'd.	Barometer.
1861.				° ′ ″	″	″	″	″	″	″	r.	r.	in.
Nov. 18	1	α Lyræ	10	0 14 59.0	56.4	59.3	61.3	62.1	59.4	59.58*d*	31.3636	.3537	- -
	2	Venus, N. L.	5	64 34 58.6	56.8	59.7	63.0	63.0	61.3	60.40	33.5468	.5526	- -
	3	Venus, S. L.	5	- - - -	- -	- -	- -	- -	- -	- -	33.2622	.2659	29.940
	4	Lalande, 45648	5	58 9 56.3	56.7	58.5	63.1	62.8	61.3	59.78	29.8808	.8844	30.016
	5	Lalande, 45804	5	57 24 56.3	55.8	57.2	61.9	61.3	60.4	58.82	30.5716	.5729	- -
	6	Weisse XXIII, 528	5	23 39 58.0	57.9	59.0	62.8	62.3	58.9	59.82	29.8494	.8453	30.020
	7	γ Cephei	10	321 59 57.4	54.0	57.6	57.8	59.4	56.6	57.13	28.1994	.1898	30.020
	8	Nadir, 23*h*. 50*m*.	6	179 59 60.1	60.8	61.8	65.8	62.5	60.8	61.97*d*	30.4708	.4697	
	9	Neptune	5	40 34 59.7	59.9	61.8	64.5	64.3	62.0	62.03	30.9134	.9150	30.018
	10	Weisse I, 100	5	29 49 59.5	59.6	62.0	64.6	65.5	60.0	61.87	28.3104	.3073	30.034
	11	Weisse I, 113	5	- - - -	- -	- -	- -	- -	- -	- -	30.7308	.7315	- -
	12	Polaris	10	310 19 58.4	55.5	60.2	56.9	61.3	56.8	58.18*d*	30.3347	.3243	30.038
	13	Nadir, 1*h*. 30*m*.	6	179 59 58.8	60.4	61.8	64.7	61.8	59.0	61.08*d*	30.4600	.4588	
	14	A. Z., 145, 126	5	349 54 59.8	58.8	63.7	63.5	63.7	58.6	61.35	28.7120	.6929	30.040
	15	ι Cassiopeæ	5	332 9 61.0	59.8	65.0	63.2	65.9	61.0	62.65	33.1818	.1750	30.040
	16	Weisse II, 455	5	35 24 63.6	64.2	67.9	69.2	66.1	64.0	65.83	33.8768	.8781	- -
	17	Weisse II, 585	5	35 4 62.1	63.0	64.0	67.3	65.3	61.9	63.93	32.7844	.7858	30.046
	18	B. A. C., 866	5	14 19 63.1	63.5	66.2	67.4	66.3	62.1	64.77	33.7490	.7483	- -
	19	β Ursæ Minoris, S. P.	10	293 39 63.9	61.0	65.4	65.2	66.4	63.0	64.15*d*	31.5162	.5300	30.046
	20	Weisse III, 62	5	30 49 64.9	65.0	66.1	71.0	68.2	66.3	66.92	31.9398	.9401	30.050
	21	Weisse III, 233	5	28 44 65.6	65.4	67.7	72.7	70.2	65.9	67.92	30.4706	.4681	30.054
	22	Weisse III, 428	5	31 49 60.4	61.6	63.0	67.0	64.5	61.4	62.98	33.1846	.1828	30.056
	23	ζ Ursæ Minoris, S. P.	5	297 9 59.7	57.0	60.5	57.5	61.8	57.7	59.03	31.7388	.7853	30.058
	24	B. A. C., 1307	5	349 9 60.8	60.2	64.4	64.8	64.5	59.6	62.38	29.3010	.2922	30.062
	25	Nadir, 4*h*. 20*m*.	6	179 59 59.5	60.8	62.2	66.0	62.1	59.7	61.72*d*	30.4742	.4731	
	26	Moon, N. L.	10	14 29 61.9	62.8	64.9	66.2	64.8	60.3	63.48	30.5199	.5153	30.084
	27	Nadir, 12*h*. 50*m*.	6	179 59 60.4	62.6	64.2	68.0	63.9	59.8	63.15*d*	30.4960	.4951	
	28	Polaris, S. P.	10	307 29 60.6	60.0	62.3	62.8	63.6	60.3	61.60*d*	30.7569	.7875	30.226
	29	Mercury, centre	5	52 34 60.9	62.2	63.9	69.2	66.1	64.1	64.40	33.3248	.3236	30.222
	30	β Ursæ Minoris	10	324 9 60.4	59.6	62.8	62.0	65.0	59.8	61.60*d*	29.2202	.2135	30.220
	31	Nadir, 15*h*. 20*m*.	6	179 59 62.0	64.8	65.7	68.8	66.8	62.0	65.02*d*	30.5205	.5194	
19	32	Sun, N. L.	5	58 9 61.2	63.3	65.3	67.7	69.9	64.6	65.33	29.0488	.0487	- -
	33	Sun, S. L.	5	58 44 61.8	63.2	65.1	67.9	69.6	65.2	65.47	31.4260	.4596	30.204
	34	Nadir, 17*h*. 50*m*.	6	179 59 60.5	61.2	63.4	64.4	64.8	60.0	62.38*d*	30.4795	.4785	
	35	α Lyræ	10	0 14 61.3	60.3	63.0	63.8	66.5	60.4	62.55*d*	31.4172	.4054	- -
	36	Venus, S. L.	5	64 24 62.0	61.2	63.4	66.8	66.8	63.7	63.98	29.6048	.6115	- -
	37	Venus, N. L.	5	- - - -	- -	- -	- -	- -	- -	- -	29.9092	.9163	30.180
	38	Nadir, 23*h*. 55*m*.	4	179 59 60.0	60.8	62.2	66.4	64.2	61.0	62.43*d*	30.4839	.4820	- -
	39	Lacaille, 9737	5	69 34 63.5	63.5	67.1	69.8	70.7	67.7	67.05	31.1445	.1528	30.187
	40	66 Piscium	5	74 14 61.0	60.8	65.0	67.9	68.8	62.7	64.37	32.3420	.3469	30.180
	41	Weisse I, 100	4	29 49 62.1	61.0	64.8	66.7	67.5	62.6	64.12	28.3750	.3708	- -
	42	Weisse I, 113	3	- - - -	- -	- -	- -	- -	- -	- -	30.8287	.8232	- -
	43	Polaris	10	310 19 63.4	59.4	64.4	62.5	66.3	61.3	62.88*d*	30.4994	.3603	30.178
	44	Lalande, 3344	5	25 14 59.0	58.7	61.8	63.3	62.7	57.8	60.55	32.1286	.1239	30.178
	45	Nadir, 2*h* 15*m*.	5	179 59 56.6	58.6	59.7	64.0	59.6	57.8	59.38*d*	30.4317	.4294	
	46	Weisse II, 415	5	35 44 59.3	58.7	62.5	65.2	64.3	58.8	61.47	30.3722	.3689	30.174
	47	B. A. C., 866	5	14 19 61.5	61.6	64.2	65.0	65.3	59.5	62.85	27.4042	.3961	- -
	48	Rumker, 755	5	23 29 62.4	62.4	65.2	66.8	67.5	62.3	64.43	33.6088	.6042	30.168
	49	Bessel Zone, 530. 91	5	15 4 62.0	61.1	64.2	64.6	63.9	59.6	62.57	33.2900	.2787	- -
	50	Weisse III, 428	5	31 49 58.8	60.1	62.1	63.2	64.8	58.3	61.22	33.1564	.1533	- -
	51	Bessel Zone, 396. 35	5	12 44 57.7	57.6	61.0	61.3	63.3	56.8	59.62	29.9216	.9160	30.162
	52	Bessel Zone, 396. 45	5	- - - -	- -	- -	- -	- -	- -	- -	31.7012	.6960	- -
	53	Anon., 4*h*. 22*m*.	3	9 54 58.5	57.2	62.5	63.9	61.7	55.5	59.88	31.8430	.8356	30.158
	54	Bessel Zone, 396	5	12 19 58.6	59.3	63.0	64.8	63.9	58.1	61.28	29.8166	.8128	30.158
	55	Nadir, 5*h*. 5*m*.	4	179 59 58.0	60.4	60.6	66.1	61.6	58.1	60.80*d*	30.4509	.4487	
20	56	Polaris, S. P.	10	307 29 61.4	58.0	61.2	56.2	62.6	63.1	60.42*d*	30.7713	.7812	30.106
	57	Nadir, 13*h*. 50*m*.	5	179 59 60.6	61.0	63.4	60.3	62.6	61.9	61.64*d*	30.4809	.4790	
21	58	Sun, N. L.	7	58 39 58.9	58.2	61.1	60.3	64.3	66.2	61.50	32.0280	.0419	30.108
	59	Nadir, 16*h*. 0*m*.	4	179 59 58.6	58.0	59.7	57.2	60.6	60.9	59.16*d*	30.4271	.4248	
	60	Nadir, 18*h*. 35*m*.	6	179 59 58.2	57.3	59.8	55.1	60.8	60.5	58.61*d*	30.4278	.4255	

PIER THERMOMETERS.

Refer'e No.	U.	L.	N.	S.	In.	Refer'e No.	U.	L.	N.	S.	In.
8	45°.4	44°.8	44°.8	44°.3	47°.0	27	40°.7	40°.4	40°.1	39°.6	43°.5
13	44.4	44.0	43.5	43.1	46.4	31	44.0	44.0	42.9	43.3	42.9
25	43.0	42.4	42.2	41.0	45.8	34	45.5	45.1	44.7	45.5	42.8

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Number.	THERM'S. At.	THERM'S. Ex.	Mic. zero.	CORRECTIONS FOR— Micrometer.	CORRECTIONS FOR— Object.	Corrected Reading.	Observed Declination.	Reduct'n to 1860.0.	Observer.	REMARKS.
	°	°	r.	° ′ ″	′ ″	° ′ ″	° ′ ″	″		
1	- -	- -	30.4274	— 58.22	+ 0.24	0 14 1.60	+38 39 37.65	— 17.26	H.	
2	- -	- -	- - -	3 16.42	1 53.48	64 33 37.46	—25 40 7.24	- -	-	Observed semi-diameter = 9″.03.
3	47.0	46.7	- - -	— 2 58.40	1 53.52	64 33 55.52				
4	43.2	41.0	.4375	+ 34.76	1 35.44	58 12 9.98	19 18 30.73	40.87		
5	- -	- -	.4376	— 8.51	1 32.71	57 26 23.02	—18 32 43.77	41.29		
6	43.0	40.7	.4379	+ 37.23	+ 26.07	23 41 3.12	+15 12 36.13	52.50		
7	42.8	40.7	.4381	+ 2 21.30	— 46.36	322 1 32.07	+76 52 7.18	62.57		
8										
9	42.2	40.1	.4387	— 29.95	+ 50.74	40 35 22.82	— 1 41 43.57			
10	41.2	39.8	.4406	+ 2 14.08	34.22	29 52 50.17	+ 9 0 49.08	48.80		
11	- -	- -	.4406	— 18.29	+ 34.16	29 50 17.74	9 3 21.51	48.76		
12	41.3	39.9	.4406	+ 7.31	— 1 10.08	310 18 55.41	88 34 43.84	55.74		
13										
14	41.0	39.4	.4420	+ 1 49.94	10.55	349 56 40.74	48 56 58.51	48.31		
15	41.0	39.1	.4424	— 2 51.75	— 31.57	332 6 39.33	66 46 59.92	46.17		
16	- -	- -	.4427	3 35.93	+ 42.35	35 22 12.25	3 31 27.00	40.52		
17	40.6	38.9	.4429	2 27.26	41.87	35 3 18.54	3 50 20.71	39.80		
18	- -	- -	.4430	3 27.75	+ 15.21	14 16 52.23	24 37 47.02	— 40.88		
19	40.4	38.5	.4433	1 8.30	— 2 15.73	293 36 40.12	74 43 0.87	+ 37.13		
20	40.2	38.3	.4436	1 34.06	+ 35.66	30 49 8.52	8 4 30.73	— 36.00		
21	40.2	38.0	.4438	1.53	32.83	28 45 39.22	10 8 0.03	34.65		
22	40.0	37.8	.4441	2 52.14	+ 37.10	31 47 47.94	7 5 51.31	— 32.96		
23	39.8	37.2	.4447	— 1 24.26	— 1 56.47	297 6 38.30	78 12 59.05	+ 24.20		
24	39.5	36.3	.4452	+ 1 12.47	— 11.48	349 11 3.37	49 42 35.88	— 23.27		
25										
26	38.5	35.5	.4465	— 4.30	+ 1 39.89	14 31 39.07	24 22 0.18			
27										
28	36.8	38.3	30.4450	21.52	— 1 18.30	307 28 21.78	+88 34 42.53	— 55.92		
29	42.0	42.5	.4400	— 3 1.24	+ 1 8.45	52 33 11.61	—13 39 32.36			
30	41.8	42.9	- - -	+ 1 17.10	— 42.97	324 10 35.73	+74 43 3.52	+ 37.33		
31										
32	- -	- -	- - -	+ 1 27.46	+ 1 28.06	58 13 0.85	—19 35 36.91	- - -	-	Observed semi-diameter = 16′ 15″.30.
33	43.0	44.5	- - -	— 1 4.07	1 30.06	58 45 31.46				
34										
35	- -	- -	- - -	— 1 0.66	0.24	0 14 2.13	+38 39 37.12	— 17.06		
36	- -	- -	- - -	+ 52.09	1 53.74	64 27 49.81	—25 34 0.97	- -	-	Observed semi-diameter = 9″.59.
37	46.0	47.3	- - -	+ 32.93	1 53.71	64 27 30.62				
38	- -	- -	- - -	- - -	- - -	- - - -	- - - -	- -	He.	
39	40.0	33.1	30.4394	44.84	2 38.06	69 37 0.27	30 43 21.02	39.17		
40	39.3	32.2	- - -	— 1 59.89	3 32.25	74 16 36.73	—35 22 57.48	38.16		
41	- -	- -	- - -	+ 2 10.02	34.93	29 52 49.07	+ 9 0 50.18	48.76		
42	- -	- -	- - -	— 24.12	+ 34.87	29 50 14.87	9 3 24.38	48.72		
43	38.9	31.9	- - -	+ 4.97	— 1 11.57	310 18 56.28	88 34 42.97	56.10		
44	- -	31.0	- - -	— 1 45.88	+ 28.71	25 13 43.38	13 39 55.87	46.90		
45										
46	37.8	30.7	- - -	+ 4.43	43.89	35 45 49.79	3 7 49.46	40.69		
47	- -	- -	- - -	+ 3 11.28	15.64	14 23 29.77	24 30 9.48	40.93		
48	- -	30.4	- - -	— 3 18.92	26.46	23 27 11.97	15 26 27.28	38.71		
49	- -	- -	- - -	2 58.46	16.39	15 2 20.50	23 51 18.75	36.43		
50	- -	- -	- - -	— 2 50.58	37.81	31 47 48.45	7 5 50.80	32.94		
51	37.0	30.1	- - -	+ 32.90	13.82	12 45 46.34	26 7 52.91	31.73		
52	- -	- -	- - -	— 1 18.98	13.79	12 43 54.43	26 9 44.82	31.21		
53	36.0	29.4	- - -	— 1 27.76	10.91	9 53 43.03	28 59 56.22	21.74		
54	36.4	29.2	- - -	+ 39.38	+ 13.39	12 20 54.05	26 32 45.20	17.18		
55										
56	42.0	41.2	30.4529	— 20.63	— 1 17.50	307 28 22.29	+88 34 43.04	— 56.62		
57										
58	47.5	50.2	30.4462	— 1 40.30	+ 17 42.82	58 56 4.02	—20 2 24.77			
59										
60										

PIER THERMOMETERS.

Refer'e No.	U.	L.	N.	S.	In.	Refer'e No.	U.	L.	N.	S.	In.
	°	°	°	°	°		°	°	°	°	°
38	43.1	42.0	42.0	41.4	43.0	57	44.0	43.4	42.8	43.0	41.0
45	41.2	40.4	39.8	39.0	- -	59	46.2	45.7	45.6	47.0	41.6
55	39.4	39.8	37.7	37.6	42.4	60	46.5	45.8	46.4	47.4	42.0

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DATE.	Number.	OBJECT.	No. of mic. readings.	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Correct'd.	Barometer.
1861.				° ′ ″	″	″	″	″	″	″	r.	r.	in.
Nov. 21	1	Venus, N. L.	4	64 9 58.9	55.0	60.0	57.9	64.0	62.0	59.63	29.0922	.0930	30.107
	2	Venus, S. L.	2	- - - -	- -	- -	- -	- -	- -	- -	28.8230	.8325	- -
	3	Weisse XXII, 1082	6	27 54 56.9	54.9	57.5	55.2	60.7	60.1	57.55	31.9604	.9607	30.158
	4	α Ursæ Majoris, S. P.	5	281 29 55.5	48.6	54.6	47.6	57.7	56.3	53.38	32.4458	.4816	30.148
	5	Nadir, 23*h* 15*m*.	5	179 59 58.8	57.2	60.8	56.0	61.2	60.5	59.08*d*	30.4368	.4346	
	6	Weisse XXIII, 710	6	32 29 57.0	54.7	58.7	53.2	60.7	59.4	57.28	36.4983	.4971	30.146
	7	Weisse XXIII, 764	6	- - - -	- -	- -	- -	- -	- -	- -	33.0693	.0674	- -
	8	Weisse XXIII, 831	6	- - - -	- -	- -	- -	- -	- -	- -	31.4107	.4070	30.146
	9	Weisse XXIII, 1039	5	39 49 57.1	55.4	60.4	55.6	63.9	62.0	59.07	33.8534	.8545	30.144
	10	Lacaille, 9732	6	62 9 53.5	51.6	55.5	51.0	58.2	58.0	54.63	32.0198	.0255	30.143
	11	Lacaille, 9737	6	69 34 52.3	51.4	57.0	52.0	58.6	58.2	54.92	30.9073	.9131	30.146
	12	Nadir, 0*h*. 35*m*.	5	179 59 59.0	58.6	61.7	57.2	61.3	61.1	59.82*d*	30.4552	.4530	
	13	Polaris	14	310 19 59.4	53.8	59.6	52.0	59.9	60.6	57.55*d*	30.3400	.3347	30.142
	14	β Ursæ Minoris	10	324 9 60.2	58.2	63.1	57.9	62.8	61.2	60.57*d*	29.2187	.2119	30.100
	15	Nadir, 15*h*. 35*m*.	6	179 59 59.8	59.2	63.1	59.7	61.4	60.9	60.68*d*	30.4786	.4776	
22	16	Sun, S. L.	5	59 24 58.8	57.3	61.8	58.6	63.2	63.6	60.55	31.6740	.6754	- -
	17	Sun, N. L.	5	58 54 61.0	61.0	65.0	62.1	66.8	66.2	63.69	34.0770	.0837	30.076
23	18	Sun, S. L.	8	59 34 62.0	59.4	63.8	61.7	65.7	68.4	63.50	29.3018	.3094	29.610
	19	Nadir	5	179 59 58.8	57.8	61.2	57.4	62.3	61.6	59.84*d*	30.4599	.4578	
	20	α Lyræ	11	0 14 58.9	55.6	59.3	55.7	60.1	60.5	58.35	31.3558	.3374	29.571
	21	Nadir, 18*h*. 55*m*	5	179 59 54.8	53.1	56.3	51.8	56.3	56.8	54.85*d*	30.3749	.3724	
	22	Venus, S. L.	5	63 54 59.7	56.1	61.5	58.1	63.2	62.8	60.23	30.5798	.5933	29.564
	23	Venus, N. L.	5	- - - -	- -	- -	- -	- -	- -	- -	30.9764	.9800	- -
25	24	Nadir, 15*h*. 40*m*.	4	179 59 58.6	59.4	62.4	58.5	61.4	59.2	59.92*d*	30.4638	.4617	
26	25	Sun, S. L.	8	60 9 60.6	58.7	65.1	60.0	64.6	63.0	62.00	29.1169	.1268	30.063
	26	α Ursæ Majoris, S. P.	11	281 29 61.0	56.2	62.3	56.2	61.7	60.6	59.67	32.5046	.5356	30.145
	27	Nadir, 23*h*. 15*m*.	5	179 59 60.0	61.0	64.0	61.1	62.5	60.8	61.57*d*	30.4966	.4948	
	28	Weisse XXIII, 710	5	32 24 59.7	58.3	63.0	58.8	62.9	60.9	60.60	31.7976	.7965	- -
	29	Anonymous, 23*h*. 37*m*.	3	- - - -	- -	- -	- -	- -	- -	- -	31.6980	.6972	- -
	30	Weisse XXIII, 831	5	- - - -	- -	- -	- -	- -	- -	- -	26.6624	.6611	30.162
	31	Lacaille, 9732	8	62 9 59.4	58.0	62.4	59.1	64.1	61.5	60.75	32.1655	.1703	- -
	32	Anonymous, 0*h*. 6.3*m*.	6	77 29 59.0	59.1	64.8	59.9	65.4	62.7	61.82	30.7488	.7612	30.166
	33	Nadir, 0*h*. 45*m*.	5	179 59 57.6	59.2	61.4	60.9	59.0	59.5	59.60*d*	30.4683	.4663	
	34	Polaris	12	310 19 57.7	54.0	60.2	52.2	59.1	56.7	56.65*d*	30.3483	.3381	30.175
30	35	Sun, N. L.	8	60 19 62.0	60.6	63.8	62.0	65.7	68.6	63.78	30.0874	.0964	29.900
	36	Nadir, 16*h*. 55*m*.	5	179 59 58.0	53.6	58.3	52.8	57.4	60.0	56.69*d*	30.4147	.4123	
Dec. 4	37	Sun, N. L.	5	60 54 59.6	61.2	64.5	65.1	62.4	63.9	62.78	30.4306	.4339	- -
	38	Sun, S. L.	5	61 29 60.6	62.0	65.7	66.0	64.0	64.9	63.87	32.7766	.7853	30.298
	39	Nadir, 17*h*. 0*m*.	6	179 59 58.5	60.0	63.2	63.0	59.6	60.3	60.77*d*	30.5148	.5141	
	40	α Lyræ	10	0 14 59.0	57.8	63.2	61.6	59.9	59.5	60.17*d*	31.3657	.3565	- -
	41	Nadir, 18*h*. 50*m*.	6	179 59 60.9	63.0	65.5	65.7	62.8	62.6	63.42*d*	30.5450	.5446	
	42	Polaris	10	310 19 59.0	56.2	61.9	54.6	59.0	57.1	57.97*d*	30.4295	.3949	30.262
	43	Nadir, 1*h*. 20*m*.	6	179 59 59.6	61.8	64.7	63.2	61.6	59.7	61.77*d*	30.5141	.5134	
	44	B. A. C., 687	5	34 29 59.0	59.7	63.0	63.1	61.0	60.7	61.08	29.7152	.7162	30.270
	45	ι Cassiopeæ	10	332 9 60.2	57.9	63.8	59.2	61.1	60.0	60.37*d*	33.2403	.2227	30.264
	46	5 Ursæ Minoris, S. P.	10	295 14 61.4	57.8	63.8	58.9	62.9	60.4	60.87*d*	31.3410	.3463	30.264
	47	Nadir, 2*h*. 40*m*.	6	179 59 61.6	64.6	66.5	66.0	63.8	62.2	64.12*d*	30.5478	.5474	
	48	β Ursæ Minoris, S. P.	10	293 39 63.8	61.1	65.8	63.0	63.6	63.3	63.43*d*	31.5738	.5964	30.268
	49	48 Cephei	10	321 39 64.7	62.8	68.5	64.0	65.3	64.8	65.02*d*	29.6933	.6871	30.254
5	50	Sun, N. L.	9	61 4 61.2	60.2	63.3	64.2	64.8	66.9	63.43*d*	32.6926	.7049	30.286
	51	Nadir, 17*h* 10*m*.	4	179 59 57.7	56.2	59.0	57.4	59.2	58.9	58.07*d*	30.4469	.4447	
	52	α Lyræ	12	0 14 58.4	52.6	60.1	53.9	59.4	56.5	56.82*d*	31.3223	.2964	30.274
	53	Nadir, 19*h* 5*m*.	5	179 59 58.7	57.8	60.4	58.2	60.2	60.2	59.25*d*	30.4612	.4591	
	54	Nadir, 20*h*. 5*m*.	3	179 59 55.3	53.2	57.0	53.0	57.1	56.3	55.32*d*	30.4025	.4001	
	55	Venus, S. L.	5	61 19 55.1	51.5	57.3	52.7	59.2	59.0	55.80	28.3656	.3775	30.277
	56	Venus, N. L.	5	- - - -	- -	- -	- -	- -	- -	- -	28.7586	.7585	- -
	57	Moon, S. L.	9	56 29 52.6	48.9	54.4	50.0	57.5	56.2	53.27	28.1308	.0802	30.278
	58	α Ursæ Majoris, S. P.	12	281 29 57.4	52.4	57.9	50.3	59.5	57.3	55.80*d*	32.5420	.5608	30.306
	59	Nadir, 23*h*. 10*m*.	5	179 59 54.6	52.4	56.3	51.3	57.2	56.0	54.64*d*	30.3958	.3933	

PIER THERMOMETERS.

Refer'e No.	U.	L.	N.	S.	In.	Refer'e No.	U.	L.	N.	S.	In.
	°	°	°	°	°		°	°	°	°	°
5	45.4	45.1	45.6	45.6	42.5	21	48.7	47.4	47.9	48.7	44.6
12	45.0	44.0	44.5	44.3	43.1	24	45.8	45.4	45.4	46.0	44.2
15	44.8	43.8	44.0	44.9	41.4	27	43.4	43.0	43.5	43.0	44.8
19	48.6	46.8	47.6	48.5	44.2	33	41.0	42.3	42.6	41.0	44.0

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Number.	THERM'S. At.	THERM'S. Ex.	Mic. zero.	CORRECTIONS FOR— Micrometer.	CORRECTIONS FOR— Object.	Corrected Reading	Observed Declination.	Reduct'n to 1860.0.	Observer.	REMARKS.
	°	°	r.	′ ″	′ ″	° ′ ″	° ′ ″	″		
1	48.0	52.0	30.4476	+ 1 25.19	+ 1 50.79	64 13 15.61	−25 19 44.52	- -	He.	Observed semi-diameter = 8″. 16.
2	- -	- -	- - -	+ 1 41.46	1 50.84	64 13 31.93				
3	45.8	44.1	.4492	− 1 35.00	+ 31.38	27 53 53.93	+10 59 45.32	− 49.91		
4	45.3	43.7	- - -	2 7.74	− 4 44.87	281 23 0.77	62 29 21.52	+ 57.32		
5										
6	44.3	42.1	.4509	6 20.02	+ 37.75	32 24 15.01	6 29 24.24	− 50.08		
7	- -	- -	.4511	2 44.45	37.84	32 27 50.67	6 25 48.58	50.12		
8	44.0	42.3	.4511	1 0.09	37.87	32 29 35.06	+ 6 24 4.19	50.23		
9	43.8	42.1	.4525	3 33.82	49.51	39 47 14.76	− 0 53 35.51	48.01		
10	43.5	41.8	.4535	1 38.80	1 52.29	62 10 8.12	23 16 28.87	41.05		
11	43.9	42.4	.4540	− 28.86	+ 2 38.44	69 37 4.50	−30 43 25.25	39.00		
12										
13	42.8	40.6	.4559	+ 7.62	− 1 10.21	310 18 54.96	+88 34 44.29	− 56.78		
14	42.1	45.4	30.4668	+ 1 18.87	− 42.59	324 10 36.85	+74 43 2.40	+ 38.57	H.	
15										
16	- -	- -	- - -	− 1 15.97	+ 1 31.47	59 25 16.05	−20 15 21.66	- -	-	Observed semi-diameter = 16′ 15″. 14.
17	44.3	48.0	- - -	− 3 47.34	+ 1 29.42	58 52 45.77				
18	48.0	43.3	30.4572	+ 1 12.14	− 14 43.20	59 21 32.44	−20 27 53.19	- -	He.	
19										
20	49.0	44.1	- - -	− 55.32	+ 0.24	0 14 3.27	+38 39 35.98	− 16.09		
21										
22	48.0	43.6	- - -	8.55	1 49.08	63 56 40.76	−25 2 49.32	- -	-	Observed semi-diameter = 12″. 19.
23	- -	- -	- - -	− 32.86	+ 1 49.01	63 56 16.38				
24										
25	47.0	44.9	30.4630	+ 1 23.98	− 14 40.17	59 56 45.81	−21 3 6.56			
26	42.3	36.5	.4699	− 2 9.84	− 4 49.21	281 23 0.62	+62 29 21.37	+ 58.31		
27										
28	- -	- -	.4708	1 23.33	+ 38.39	32 24 15.66	6 29 23.59	− 49.80		
29	- -	- -	.4708	− 1 17.08	38.41	32 24 21.93	6 29 17.32	49.84		
30	42.0	34.2	.4708	+ 3 59.44	38.52	32 29 38.56	+ 6 24 0.69	49.89		
31	- -	- -	.4712	− 1 46.80	1 54.18	62 10 8.13	−23 16 28.88	40.42		
32	41.3	33.7	.4712	− 18.23	+ 4 27.31	77 34 10.90	−38 40 31.65	35.81		
33										
34	40.8	33.3	.4725	+ 8.45	− 1 11.35	310 18 53.75	+88 34 45.50	58.27		
35	50.2	44.6	30.4649	23.16	+ 17 51.11	60 38 18.05	−21 44 38.80			
36										
37	- -	- -	30.5018	+ 4.27	1 41.78	60 56 48.83	−22 19 27.43	- -	H.	Exceedingly ill-defined and tremulous. Observed semi-diameter = 16′ 17″. 85.
38	35.0	32.5	- - -	− 2 23.53	1 44.19	61 29 24.53				
39										
40	- -	- -	.4902	− 54.45	+ 0.24	0 14 5.96	+38 39 33.29	13.45		
41										
42	33.8	27.0	.4835	+ 5.57	− 1 12.51	310 18 51.03	88 34 48.22	60.44		
43										
44	33.6	27.0	- - -	+ 48.23	+ 42.39	34 31 31.70	4 22 7.55	42.02		
45	33.5	26.9	- - -	− 2 52.17	− 32.62	332 6 35.58	66 47 3.67	− 50.47		
46	33.6	26.8	- - -	54.23	2 10.24	295 11 56.40	76 18 17.15	+ 47.97		
47										
48	33.8	26.9	- - -	− 1 9.95	2 20.05	293 36 33.43	74 42 54.18	+ 43.16		
49	33.5	26.8	- - -	+ 50.06	− 48.71	321 40 6.37	+77 13 32.88	− 41.84		
50	41.0	40.4	30.4753	− 2 20.14	+ 17 57.11	61 20 40.40	−22 27 1.15	- -	He.	
51										
52	42.7	43.7	.4736	− 51.71	0.24	0 14 5.35	+38 39 33.90	− 13.16		
53										
54										
55	43.3	44.1	.4752	+ 2 11.85	1 38.56	61 23 46.21	−22 29 54.88	- -	-	Observed semi diameter = 12″. 08.
56	- -	- -	- - -	1 47.90	+ 1 38.36	61 23 22.06				
57	43.5	44.2	.4754	+ 2 30.55	− 62 57.41	55 29 26.41	−16 35 47.16			
58	42.0	39.2	.4785	− 2 10.88	− 4 49.16	281 22 55.76	+62 29 16.51	+ 60.06		
59										

PIER THERMOMETERS.

Refer'e No.	U.	L.	N.	S.	In.	Refer'e No.	U.	L.	N.	S.	In.
	°	°	°	°	°		°	°	°	°	°
36	52.4	49.2	50.8	51.3	48.5	51	40.0	40.3	39.9	42.0	35.6
39	38.8	38.0	37.5	37.8	37.5	53	42.0	41.8	41.7	42.8	35.7
41	38.3	37.7	37.0	37.6	37.4	54	42.9	41.4	- -	- -	- -
43	34.6	35.3	34.6	33.8	37.4	59	41.7	41.3	41.9	42.0	38.3
47	34.1	35.5	34.5	33.5	37.0						

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DATE.	Number.	OBJECT.	No. of mic. readings.	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Correct'd.	Barometer.
1861.				° ′ ″	″	″	″	″	″	″	r.	r.	in.
Dec. 5	1	Weisse XXIII, 764	6	32 29 60.0	56.8	60.8	56.0	63.7	61.4	59.78	33.1242	.1214	30.320
	2	B. A. C., 8272	5	31 24 60.0	55.9	61.5	55.9	64.0	60.8	59.68	31.3952	.3902	- -
	3	Weisse XXIII, 1267	6	38 59 59.2	57.2	61.5	56.1	64.3	61.5	59.97	33.1097	.1087	30.334
	4	B. A. C., 27	6	77 29 56.8	54.0	60.0	54.5	62.5	60.8	58.10	35.4243	.4289	30.386
	5	21 Cassiopeæ	12	324 39 56.8	51.2	56.8	48.0	58.6	57.6	54.84*d*	30.4462	.4094	30.336
	6	Nadir, 0*h*. 55*m*.	5	179 59 58.4	57.3	60.9	57.0	61.8	59.9	59.22*d*	30.4693	.4673	
	7	Polaris	12	310 19 59.0	53.5	59.3	50.6	60.3	59.2	56.99*d*	30.3896	.3850	30.356
	8	β Ursæ Minoris	10	324 9 58.6	56.8	61.1	54.5	61.4	58.9	58.55*d*	29.1450	.0930	30.520
	9	Nadir, 15*h*. 15*m*.	6	179 59 60.0	59.6	63.0	59.4	62.0	61.0	60.83*d*	30.4938	.4929	
	10	Mercury, centre	5	56 29 59.8	58.9	64.2	59.7	64.1	63.8	61.75	31.5594	.5782	30.524
6	11	Sun, S. L.	5	61 44 58.0	56.2	59.8	58.2	61.6	63.2	59.50	32.8756	.8798	- -
	12	Sun, N. L.	5	61 9 58.6	57.6	60.4	59.3	62.2	64.8	60.48	30.5020	.5309	30.510
	13	Nadir, 18*h*. 10*m*.	6	179 59 58.0	55.2	60.0	54.1	59.4	59.6	57.72*d*	30.4441	.4428	
	14	α Lyræ	10	0 14 57.8	53.2	58.1	53.4	58.8	59.5	56.80*d*	31.2952	.2831	- -
	15	Venus, S. L.	5	61 4 61.9	59.4	62.0	60.6	65.5	70.4	63.30	29.7592	.7727	- -
	16	Venus, N. L.	5	- - - -	- -	- -	- -	- -	- -	- -	30.1404	.1476	30.508
	17	Nadir, 21*h*. 0*m*.	6	179 59 59.4	55.2	58.4	53.6	59.6	62.5	58.12*d*	30.4442	.4429	
	18	Moon, S. L.	12	51 44 57.2	54.4	58.7	52.7	63.0	61.8	57.97	32.0238	.0268	30.502
	19	Lalande, 45648	5	58 9 57.9	55.7	59.3	55.8	63.2	66.2	59.68	29.9082	.9117	30.496
	20	Lalande, 45804	5	57 24 59.8	56.5	60.4	56.6	63.7	66.2	60.53	30.6080	.6100	- -
	21	λ Draconis, S. P.	10	288 59 57.2	50.2	56.0	46.2	58.7	57.8	54.35*d*	28.7916	.7993	30.496
	22	γ Cephei	10	321 59 61.0	55.5	61.4	52.1	62.8	62.0	59.13*d*	28.3113	.2995	30.496
	23	Nadir, 23*h*. 45*m*.	6	179 59 59.6	56.8	60.6	54.0	61.6	61.4	59.00*d*	30.4650	.4638	
	24	Neptune	5	40 34 59.8	57.6	60.6	55.1	63.2	63.9	60.03	28.7042	.7058	- -
	25	4 Draconis, S. P.	10	297 19 57.8	52.1	57.2	46.9	59.4	57.8	55.20*d*	32.1584	.1684	30.504
	26	κ Draconis, S. P.	10	289 29 63.2	57.7	62.2	53.4	64.4	63.5	60.73*d*	31.4004	.4042	30.498
	27	21 Cassiopeæ	10	324 39 62.9	58.2	63.6	53.2	65.7	64.7	61.38*d*	30.5187	.5284	30.500
	28	32² Camelopard. S. P.	10	303 4 62.0	56.8	63.1	53.6	64.4	62.8	60.45*d*	30.8640	.8679	30.496
	29	Nadir, 1*h*. 0*m*.	6	179 59 60.6	59.5	62.5	57.4	63.5	62.9	61.07*d*	30.4981	.4972	
	30	Polaris	10	310 19 59.2	53.8	58.9	49.8	60.3	60.4	57.07*d*	30.4111	.4076	30.492
	31	Bessel Zone, 391	5	17 49 58.8	57.4	60.5	56.4	61.3	60.1	59.08	29.1122	.1102	30.486
	32	Anon., 2*h*. 48.4*m*.	4	24 4 57.5	55.6	58.4	55.1	59.5	59.2	57.55	30.7338	.7342	- -
	33	Anon., 2*h*. 48.6*m*.	3	- - - -	- -	- -	- -	- -	- -	- -	30.6363	.6260	30.486
	34	Bessel Zone, 27	5	16 19 57.7	55.1	59.2	53.5	58.2	58.9	57.10	28.3852	.3811	- -
	35	48 Cephei	10	321 39 58.6	55.3	61.2	54.1	60.5	60.9	58.43*d*	29.5908	.5780	30.494
	36	Rumker, 845	4	14 39 58.6	56.7	59.6	56.2	60.2	59.7	58.50	32.3412	.3365	30.494
	37	Nadir, 3*h*. 25*m*.	6	179 59 62.6	63.6	65.2	63.1	65.4	65.8	64.28*d*	30.5461	.5455	
7	38	Moon, S. L.	6	46 29 62.0	59.1	65.0	60.2	67.3	65.7	63.22	31.5750	.3967	30.268
	39	Nadir, 22*h*. 30*m*.	5	179 59 60.8	58.9	62.2	58.8	62.4	63.7	61.13*d*	30.4880	.4861	
	40	Weisse XXII, 1108	5	27 24 62.8	60.8	66.9	61.1	67.3	65.0	63.98	32.5450	.5381	30.262
	41	λ Draconis, S. P.	14	288 59 59.9	54.6	59.8	52.0	62.0	60.6	58.14*d*	28.8636	.8925	30.265
	42	82 Pegasi	6	28 44 58.1	55.9	60.3	57.8	62.6	61.1	59.30	33.2332	.2288	30.264
	43	κ Draconis, S. P.	12	289 29 57.0	50.5	56.9	48.3	58.0	57.7	54.74*d*	31.3211	.3405	30.268
	44	21 Cassiopeæ	12	324 39 58.6	53.9	59.8	50.3	61.6	60.1	57.38*d*	30.5048	.4704	30.247
	45	Nadir, 0*h*. 50*m*	7	179 59 59.0	57.4	60.6	57.8	61.0	61.5	59.54*d*	30.4717	.4697	
	46	Polaris	10	310 19 58.6	52.8	58.8	50.7	59.8	59.9	56.75*d*	30.4315	.4013	30.236
8	47	Mercury, centre	5	57 44 60.8	60.3	64.9	60.8	66.0	63.1	62.65	29.8790	.8780	30.038
	48	Nadir, 16*h*. 0*m*.	6	179 59 61.7	61.0	64.8	60.0	63.6	60.5	61.93*d*	30.5043	.5035	
9	49	Sun, N. L.	5	61 29 62.4	61.3	64.5	61.0	66.9	66.5	63.77	31.5788	.5825	- -
	50	Sun, S. L.	5	62 4 61.2	58.9	62.4	59.3	65.2	64.7	61.95	33.9120	.9221	30.016
	51	α Lyræ	10	0 14 59.8	56.3	62.1	53.7	64.0	58.7	59.10*d*	31.3109	.3023	- -
	52	Nadir, 18*h*. 50*m*.	6	179 59 58.9	53.0	60.3	50.8	60.3	57.9	56.87*d*	30.4232	.4228	
	53	Nadir, 23*h*. 20*m*.	6	179 59 60.3	52.4	60.1	49.6	59.6	59.6	56.93*d*	30.4351	.4338	
	54	Moon, S. L.	10	35 49 59.0	53.6	60.1	50.4	63.3	58.7	57.52	30.5104	.5260	29.984
	55	Polaris	10	310 19 57.4	48.8	57.7	41.0	58.9	54.6	53.07*d*	30.4039	.4016	29.984
	56	β Ursæ Minoris, S. P.	5	293 39 62.8	55.4	62.8	52.1	64.2	61.1	59.73	31.5606	.6488	29.972
	57	Nadir, 3*h*. 10*m*.	6	179 59 60.0	56.1	61.4	53.3	61.3	59.6	58.62*d*	30.4633	.4621	
	58	γ² Ursæ Minoris, S. P.	10	291 14 60.4	52.2	59.6	49.5	60.0	59.2	56.82*d*	30.0087	.0186	29.976
	59	ζ Ursæ Minoris, S. P.	10	297 9 61.0	53.9	59.4	49.9	61.1	59.1	57.40*d*	31.9536	.9621	29.976
	60	Groombridge, 2320, S. P.	10	287 4 62.2	54.4	60.4	53.4	61.5	61.2	58.85*d*	28.4612	.4742	29.974

PIER THERMOMETERS.

Refer'e No.	U.	L.	N.	S.	In.	Refer'e No.	U.	L.	N.	S.	In.
	°	°	°	°	°		°	°	°	°	°
6	41.2	40.3	41.0	41.0	37.5	23	45.5	44.6	46.0	46.3	40.1
9	40.4	39.6	39.8	40.3	37.7	29	43.4	43.0	43.1	43.5	40.3
13	45.4	44.0	45.4	45.8	38.0	37	40.4	40.4	39.5	40.5	41.0
17	48.0	46.5	48.3	50.2	38.9	39	45.7	44.0	45.3	45.5	40.2

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Number.	THERM'S. At.	THERM'S. Ex.	Mic. Zero.	CORRECTIONS FOR— Micrometer.	CORRECTIONS FOR— Object.	Corrected Reading.	Observed Declination.	Reduct'n to 1860.0.	Observer.	REMARKS.
	°	°	r.	′ ″	′ ″	° ′ ″	° ′ ″	″		
1	42.2	37.7	30.4787	− 2 46.10	+ 38.41	32 27 52.09	+ 6 25 47.16	− 49.46	He.	
2	- -	- -	.4788	57.28	36.87	31 24 39.27	+ 7 28 59.98	49.87		
3	42.5	37.2	.4792	2 45.27	48.88	38 58 3.58	− 0 4 24.33	47.47		
4	42.0	37.0	.4792	− 5 11.10	+ 4 19.62	77 29 6.62	−38 35 27.37	34.83		
5	40.7	35.2	.4797	+ 4.42	− 43.05	324 39 16.21	+74 14 23.04	62.95		
6										
7	41.0	34.4	.4798	5.96	1 11.62	310 18 51.33	88 34 47.92	− 60.74		
8	39.0	38.7	30.4794	+ 1 27.14	− 43.77	324 10 41.92	+74 42 57.33	+ 43.72	H.	Faint and unsteady.
9										
10	40.0	41.0	- - -	− 1 9.06	+ 1 24.80	56 30 17.49	−17 36 38.24			
11	- -	- -	- - -	2 30.87	1 42.90	61 44 11.53 }	−22 34 15.39	- -	-	Observed semi-diameter = 16′ 16″.89.
12	43.0	46.3	- - -	3.24	1 40.51	61 11 37.75 }				
13										
14	- -	- -	- - -	− 50.51	0.24	0 14 6.53	+38 39 32.72	− 12.87		
15	- -	- -	- - -	+ 44.42	1 36.64	61 7 24.36 }	−22 13 33.21	- -	-	Observed semi-diameter = 11″.90.
16	50.0	51.1	- - -	+ 20.86	+ 1 36.41	61 7 0.57 }				
17										
18	49.0	47.9	30.4776	− 1 37.37	− 59 14.98	50 44 5.62	11 50 26.37			
19	47.8	42.3	- - -	+ 35.63	+ 1 36.68	58 12 11.99	19 18 32.74	39.47		
20	- -	- -	- - -	− 8.32	+ 1 33.91	57 26 26.12	−18 32 46.87	− 39.91		
21	47.5	42.0	- - -	+ 1 45.49	− 2 52.94	288 58 46.90	+70 5 7.65	+ 63.09		
22	47.4	41.9	- - -	2 16.90	− 46.95	322 1 29.08	+76 52 10.17	− 65.37		
23										
24	- -	- -	- - -	+ 1 51.37	+ 51.50	40 37 42.90	− 1 44 3.65			
25	46.7	41.3	- - -	− 1 46.26	− 1 56.35	297 16 12.59	+78 22 33.34	+ 64.22		
26	46.0	40.0	- - -	58.23	2 49.37	289 26 13.13	70 32 33.88	+ 62.41		
27	46.0	39.8	- - -	3.18	42.87	324 39 15.33	74 14 23.92	− 63.48		
28	45.4	39.5	- - -	− 24.53	1 32.69	303 3 3.23	84 9 23.98	+ 62.54		
29										
30	44.8	38.3	- - -	+ 4.40	− 1 11.35	310 18 50.12	88 34 49.13	− 61.00		
31	41.8	36.0	- - -	+ 1 25.95	+ 19.63	17 51 44.66	2 1 54.59	41.84		
32	- -	- -	- - -	− 16.01	27.26	24 5 8.80	14 48 30.45	38.91		
33	41.7	35.6	- - -	− 9.33	27.26	24 5 15.48	14 48 23.77	38.86		
34	- -	- -	- - -	+ 2 11.78	+ 17.93	16 22 26.81	22 31 12.44	39.12		
35	41.4	35.0	- - -	+ 56.55	− 48.27	321 40 6.71	77 13 32.54	42.61		
36	41.0	34.6	- - -	− 1 56.83	+ 15.97	14 38 17.64	+24 15 21.61	36.21		
37										
38	45.8	44.3	30.4681	58.37	− 55 6.67	45 33 58.18	− 6 40 18.93	- -	He.	
39										
40	45.5	42.3	.4683	− 2 10.10	+ 30.93	27 23 24.81	+11 30 14.44	− 49.34		
41	45.0	41.8	.4710	+ 1 39.22	− 2 51.73	288 58 45.63	70 5 6.38	+ 63.11		
42	44.9	41.0	.4725	− 2 53.24	+ 32.78	28 42 38.84	10 11 0.41	− 50.75		
43	44.0	39.4	.4753	− 54.38	− 2 48.32	289 26 12.04	70 32 32.79	+ 63.42		
44	44.0	39.4	.4763	+ 0.38	42.55	324 39 15.21	74 14 24.04	− 63.33		
45										
46	44.1	38.3	.4770	4.76	− 1 10.75	310 18 50.76	+88 34 48.49	61.24		
47	47.0	51.3	30.4727	+ 37.38	+ 1 26.02	57 47 6.05	−18 53 26.80	- -	H.	Very unsteady.
48										
49	- -	- -	- - -	− 1 9.75	1 37.15	61 30 31.17 }	−22 53 8.66	- -	-	Observed semi-diameter = 16′ 16″.74.
50	52.3	60.2	- - -	3 36.79	1 39.49	62 3 4.65 }				
51	- -	- -	- - -	52.13	+ 0.24	0 14 7.21	+38 39 32.04	11.94		
52										
53										
54	55.8	51.8	.4834	− 2.68	− 46 18.20	35 3 36.64	3 50 2.61			
55	54.5	49.6	- - -	+ 5.14	1 8.55	310 18 49.66	88 34 49.59	− 61.67		
56	52.0	46.3	- - -	− 1 13.25	2 13.16	293 36 33.32	74 42 54.07	+ 44.98		
57										
58	51.5	45.3	- - -	+ 29.21	2 29.96	291 12 56.07	72 19 16.82	38.56		
59	51.0	44.5	- - -	− 1 32.95	1 54.35	297 6 30.10	78 12 50.85	32.10		
60	50.2	44.4	30.4834	+ 2 6.28	− 3 8.91	287 3 56.22	+68 10 16.97	+ 27.57		

PIER THERMOMETERS.

Refer'e No.	U.	L.	N.	S.	In.	Refer'e No.	U.	L.	N.	S.	In.
	°	°	°	°	°		°	°	°	°	°
45	44.5	43.7	44.5	44.9	- -	53	55.0	52.2	55.3	55.2	47.3
48	49.5	47.3	48.8	49.4	45.4	57	51.5	- -	50.4	51.2	48.5
52	55.6	52.2	56.0	55.5	45.4						

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DATE.	Number.	OBJECT.	No. of mic. readings.	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Correct'd.	Barometer.
1861.				° ′ ″	″	″	″	″	″	″	r.	r.	in
Dec. 10	1	Sun, N. L.	10	61 34 59.1	57.1	60.8	57.9	62.6	62.0	59.92*d*	31.1611	.1708	29.968
	2	Nadir, 17*h*. 35*m*.	5	179 59 60.0	55.1	62.4	56.3	60.0	59.9	58.95*d*	30.4516	.4489	- -
	3	α Lyræ	10	0 14 58.2	47.5	60.1	49.6	58.4	55.1	54.73*d*	31.2587	.2390	29.937
	4	Nadir, 19*h*. 0*m*.	4	179 59 57.0	53.3	58.6	53.5	58.1	56.4	56.15*d*	30.4088	.4064	
	5	Nadir, 23*h*. 5*m*.	5	179 59 56.6	48.2	57.4	49.0	56.2	56.7	54.02*d*	30.3812	.3787	
	6	λ Draconis, S. P.	12	288 59 54.6	43.6	52.9	41.8	55.6	52.7	50.20*d*	28.8482	.8677	29.954
	7	82 Pegasi	6	28 44 57.9	50.3	59.1	52.4	61.3	58.9	56.65	33.1755	.1713	29.964
	8	Neptune	5	40 34 58.1	52.0	59.6	52.9	61.0	61.2	57.47	28.6950	.6959	29.970
	9	Nadir	5	179 59 59.4	52.2	60.0	51.6	60.0	59.0	57.03*d*	30.4294	.4271	
	10	Moon, S. L.	10	30 49 60.0	51.6	60.3	51.5	62.3	59.9	57.60	32.2642	.2556	29.966
11	11	Anon., 22*h*. 52 4*m*.	5	27 24 62.4	61.5	66.7	61.3	64.0	61.5	62.90	30.2394	.2371	30.284
	12	Nadir, 23*h* 10*m*.	6	179 59 63.0	62.0	65.8	62.2	62.6	61.5	62.85*d*	30.5321	.5316	
	13	Lalande, 45838	5	57 44 61.9	60.7	66.0	61.6	65.8	63.2	63.20	32.2196	.2204	30.304
	14	Weisse XXIII, 528	5	23 39 61.6	59.5	65.0	58.4	62.7	59.2	61.07	29.8918	.8901	30.316
	15	Weisse XXIII, 683	5	31 44 60.3	57.3	63.4	57.2	61.6	57.8	59.60	29.9268	.9275	30.320
	16	Weisse XXIII, 828, 829	5	29 29 59.5	56.0	62.4	56.6	61.1	56.7	58.72	30.4434	.4406	30.324
	17	Weisse XXIII, 1030	5	28 9 59.4	56.5	62.9	57.2	61.0	57.2	59.03	29.9702	.9700	30.324
	18	Weisse XXIII, 1146	5	40 34 58.3	56.1	62.0	56.7	59.0	57.5	58.27	32.9880	.9891	- -
	19	Neptune	5	- - - -	- -	- -	- -	- -	- -	- -	28.8062	.8082	30.330
	20	Lacaille, 9753	5	74 29 57.8	55.6	63.3	56.7	60.2	57.0	58.43	32.4484	.4552	30.334
	21	B. A. C., 37	5	- - - -	- -	- -	- -	- -	- -	- -	30.0058	.0092	- -
	22	Nadir, 0*h*. 40*m*.	6	179 59 60.2	61.6	64.8	61.2	60.9	57.8	61.08*d*	30.5001	.4992	
	23	Polaris	10	310 19 60.0	56.6	61.9	54.2	58.9	57.0	58.10*d*	30.4819	.4128	30.368
	24	Moon, S. L.	10	26 9 59.4	58.7	63.3	58.7	59.3	56.4	59.30	29.4514	.4452	30.368
	25	Weisse I, 1050	5	24 54 59.8	57.5	62.2	59.2	58.1	56.0	58.80	27.9964	.9960	30.388
	26	B. A. C., 687	5	34 29 58.7	57.9	62.3	59.2	59.5	57.2	59.13	29.6648	.6653	30.390
12	27	Sun, N. L.	9	61 44 57.8	52.7	59.2	58.4	57.6	59.6	57.55*d*	31.7912	.8026	30.633
	28	Nadir, 17*h*. 37*m*.	5	179 59 56.4	59.1	62.9	56.0	61.4	51.8	57.93*d*	30.4269	.4246	
	29	Nadir, 18*h*. 22*m*.	5	179 59 55.8	59.2	62.0	57.2	60.8	53.4	58.07*d*	30.4333	.4310	
	30	α Lyræ	11	0 14 58.4	56.1	62.9	55.8	61.1	54.2	58.08*d*	31.2865	.2640	30.618
	31	Nadir, 23*h* 8*m*.	6	179 59 55.3	56.2	60.9	56.1	57.6	50.9	56.17*d*	30.4186	.4163	
	32	Lalande, 45838	5	57 44 54.2	53.9	60.1	56.9	60.1	54.3	56.58	32.1432	.1465	30.620
	33	Weisse XXIII. 683	6	31 44 55.7	55.0	60.9	55.8	58.5	51.9	56.30	29.8800	.8791	30.612
	34	Anon , 23*h*. 51*m*.	6	28 9 55.4	55.8	60.7	56.0	58.9	52.2	56.50	31.7867	.7839	30.617
	35	B. A. C., 27	6	77 29 55.1	56.0	62.0	57.1	61.0	55.0	57.70	35.5240	.5415	30.626
	36	Nadir, 0*h* 33*m*	5	179 59 60.8	62.3	66.3	63.9	62.6	58.3	62.37*d*	30.5163	.5148	
	37	Polaris	10	310 19 60.7	58.0	64.3	55.6	61.9	56.3	59.47*d*	30.4303	.4256	30.632
	38	A Cassiopeæ	10	329 19 60.0	58.3	65.8	57.5	61.0	56.7	59.88	29.8115	.7725	30.638
	39	Nadir, 1*h* 45*m*.	5	179 59 58.9	59.6	64.0	60.5	60.6	55.0	59.77*d*	30.4799	.4779	
	40	Mercury, centre	5	59 19 60.5	61.3	63.2	65.2	63.0	63.3	62.75	28.7548	.7800	30.634
	41	Nadir, 16*h*. 35*m*.	6	179 59 59.8	59.2	62.8	61.0	59.5	57.1	59.90*d*	30.4809	.4799	
13	42	Sun, N. L.	5	61 49 59.7	58.9	63.1	59.8	62.1	57.8	60.23	32.7508	.7568	- -
	43	Sun, S. L.	5	62 19 57.6	58.0	60.9	58.5	60.8	56.2	58.67	30.3370	.3422	30.604
	44	α Lyræ	10	0 14 59.2	57.3	62.4	58.2	61.0	55.5	58.93*d*	31.3001	.2915	- -
	45	Nadir, 18*h*. 40*m*.	6	179 59 57.4	56.7	61.1	56.4	59.0	54.1	57.45*d*	30.4432	.4419	
	46	Weisse XXIII, 705	5	31 29 57.6	56.3	60.4	56.8	59.9	56.1	57.85	33.7722	.7718	30.512
	47	Weisse XXIII, 749	4	30 44 60.5	57.1	61.1	58.6	60.5	57.8	59.27	33.1520	.1510	- -
	48	Weisse XXIII, 828, 829	5	29 29 60.2	57.8	63.1	60.5	62.0	58.2	60.30	30.4746	.4720	- -
	49	Anon., 23*h*. 43.4*m*.	4	31 34 61.5	59.8	64.1	61.3	62.8	59.8	61.55	33.4192	.4136	- -
	50	Weisse XXIII, 932	3	32 59 59.8	59.0	62.0	59.1	61.6	57.5	59.83	33.4423	.4331	30.510
	51	Weisse XXIII, 1146	3	40 34 61.4	60.6	64.3	62.0	62.8	61.0	62.02	33.1583	.1577	- -
	52	Neptune	4	- - - -	- -	- -	- -	- -	- -	- -	29.1545	.1543	- -
	53	Lacaille, 9726	4	77 34 61.5	60.0	64.8	62.4	64.5	62.2	62.57	34.2655	.2663	- -
	54	Lacaille, 9753	5	74 29 60.4	58.5	63.9	61.7	62.5	60.0	61.17	32.5412	.5425	- -
	55	B. A. C., 37	5	- - - -	- -	- -	- -	- -	- -	- -	30.1232	.1279	30.512
	56	Nadir, 0*h*. 20*m*.	6	179 59 59.2	60.1	62.4	60.6	60.2	57.1	59.93*d*	30.4900	.4891	
	57	Polaris	10	310 19 59.4	55.4	62.1	52.3	60.1	54.3	57.27*d*	30.5491	.4249	30.508
	58	Weisse I, 89	5	37 34 58.0	56.4	61.3	58.5	60.5	55.6	58.38	29.9274	.9286	- -
	59	Weisse I, 197	5	37 9 60.0	57.9	62.8	59.4	61.9	57.0	59.83	33.3738	.3718	30.502
	60	Weisse I, 569	5	27 44 61.5	60.6	65.1	61.7	63.3	59.0	61.87	33.2470	.2440	- -
	61	Anon., 1*h*. 33.8*m*.	3	27 29 62.0	60.5	65.6	62.1	63.1	59.5	62.13	31.3983	.3848	30.490

PIER THERMOMETERS.

Refer'e No.	U.	L.	N.	S.	In.	Refer'e No.	U.	L.	N.	S.	In.
	°	°	°	°	°		°	°	°	°	°
2	51.9	49.9	51.4	52.5	48.5	12	47.5	47.5	48.5	47.0	52.2
4	53.9	51.4	53.0	53.8	- -	22	44.6	46.4	46.5	42.2	52.0
5	55.5	52.5	55.6	55.3	- -	28	47.2	45.7	45.2	49.5	- -
9	55.8	53.4	55.7	55.8	- -	29	48.2	45.6	45.7	48.2	- -

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Number.	THERM'S. At.	THERM'S. Ex.	Mic. zero.	CORRECTIONS FOR— Micrometer.	CORRECTIONS FOR— Object.	Corrected Reading.	Observed Declination.	Reduct'n to 1860.0.	Observer.	REMARKS.
	°	°	r.	′ ″	′ ″	° ′ ″	° ′ ″	″		
1	52.0	55.2	30.4658	— 44.31	+ 17 55.65	61 52 11.26	−22 58 32.01	- -	He.	
2										
3	53.6	58.8	.4670	— 48.52	+ 0.24	0 14 6.45	+38 39 32.80	— 11.66		
4										
5										
6	54.8	54.0	.4738	+ 1 40.95	— 2 45.77	288 58 45.38	70 5 6.13	+ 63.65		
7	55.0	53.9	.4740	— 2 49.53	+ 31.62	28 42 38.74	+10 11 0.51	— 50.48		
8	55.2	54.9	.4740	+ 1 51.76	+ 49.21	40 37 38.44	— 1 43 59.19			
9										
10	55.2	54.2	.4742	— 1 51.97	— 42 1.96	30 6 3.67	+ 8 47 35.58			
11	49.0	40.0	30.4842	+ 15.53	+ 31.13	27 25 49.56	+11 27 49.69	48.81	H.	
12										
13	48.0	39.0	- - -	— 1 49.13	1 35.03	57 44 49.10	—18 51 9.85	39.41		
14	47.5	38.5	- - -	+ 37.34	26.43	23 41 4.84	+15 12 34.41	51.72		
15	47.6	38.3	- - -	34.99	37.33	31 46 11.92	7 7 27.33	49.08		
16	47.5	38.2	- - -	2.74	34.12	29 30 35.58	9 23 3.67	50.02	-	Observed as one star.
17	47.2	38.1	- - -	+ 32.31	32.31	28 11 3.65	+10 42 35.60	50.58		
18	- -	- -	- - -	— 2 37.45	51.56	40 33 12.38	— 1 39 33.13	46.31		
19	47.0	38.3	- - -	+ 1 45.33	51.51	40 37 35.11	1 43 55.86			
20	47.0	38.0	- - -	— 2 3.90	3 34.10	74 31 28.63	35 37 49.38	34.94		
21	- -	- -	- - -	+ 29.84	+ 3 34.70	74 34 2.97	—35 40 23.72	34.93		
22										
23	46.0	36.2	- - -	4.48	— 1 11.35	310 18 51.23	+88 34 48.02	62.03		
24	45.7	35.8	- - -	1 5.30	— 38 1.06	25 33 3.54	13 20 35.71			
25	45.0	35.3	- - -	2 36.39	+ 28.31	24 58 3.50	13 55 35.75	44.90		
26	45.0	35.2	- - -	+ 51.47	41.82	34 31 32.42	+ 4 22 6.83	41.59		
27	45.4	35.8	30.4581	— 1 24.51	18 3.24	62 1 36.28	—23 7 57.03	- -	He.	
28										
29										
30	44.7	37.4	.4618	50.42	0.25	0 14 7.91	+38 39 31.34	11.13	-	Tremulous.
31										
32	40.8	32.0	.4787	— 1 44.83	1 37.00	57 44 48.75	—18 51 9.50	39.36		
33	40.8	31.7	- - -	+ 37.69	38.21	31 46 12.20	+ 7 7 27.05	49.02		
34	40.8	31.0	- - -	— 1 22.04	33.06	28 9 7.52	+10 44 31.73	50.58		
35	- -	30.6	- - -	— 5 18.21	+ 4 31.33	77 29 10.82	—38 35 31.57	34.04		
36										
37	40.0	28.8	- - -	+ 3.34	— 1 13.09	310 18 49.72	+88 34 49.53	62.22		
38	40.0	28.3	- - -	44.38	— 36.86	329 20 7.40	+69 33 31.85	60.04		
39										
40	39.0	33.1	30.4820	+ 1 46.98	+ 1 37.85	59 23 27.58	—20 29 48.33	- -	H.	
41										
42	- -	- -	- - -	— 2 22.98	1 45.86	61 49 23.11 }	—23 12 0.21	- -	-	Observed semi-diameter =16′ 16″.35.
43	41.0	36.6	- - -	+ 8.79	1 48.35	62 21 55.81 }				
44	- -	- -	- - -	— 50.88	0.24	0 14 8.29	+38 39 30.96	10.89		
45										
46	42.0	33.4	.4922	3 26.13	37.50	31 27 9.22	7 26 30.03	49.05		
47	- -	- -	- - -	— 2 47.11	36.40	30 42 48.56	8 10 50.69	49.36		
48	- -	- -	- - -	+ 1.27	34.70	29 30 36.27	9 23 2.98	49.86	-	Observed as one star.
49	- -	- -	- - -	— 3 3.62	37.64	31 32 35.57	7 21 3.68	49.19		
50	41.5	33.1	- - -	3 4.85	39.76	32 57 34.74	+ 5 56 4.51	48.73		
51	- -	- -	- - -	— 2 47.54	52.45	40 33 6.93	— 1 39 27.68	46.13		
52	- -	- -	- - -	+ 1 24.09	52.39	40 37 18.50	1 43 39.25			
53	- -	- -	- - -	— 3 57.22	4 31.28	77 35 36.63	38 41 57.38	33.82		
54	- -	- -	- - -	— 2 8.87	3 37.76	74 31 30.06	35 37 50.81	34.75		
55	46.3	32.5	- - -	+ 22.90	+ 3 38.49	74 34 2.56	—35 40 23.31	34.75		
56										
57	40.8	31.0	- - -	4.22	— 1 12.47	310 18 49.02	+88 34 50.23	62.41		
58	- -	- -	- - -	+ 35.42	+ 47.44	37 36 21.24	1 17 18.01	45.14		
59	40.2	30.6	- - -	— 3 0.99	46.63	37 7 45.47	1 45 53.78	45.10		
60	- -	- -	- - -	2 52.96	32.40	27 42 41.31	11 10 57.94	46.57		
61	40.0	30.0	30.4922	— 56.10	+ 32.10	27 29 38.13	+11 24 1.12	— 46.58		

PIER THERMOMETERS.

Refer'e No.	U.	L.	N.	S.	In.	Refer'e No.	U.	L.	N.	S.	In.
	°	°	°	°	°		°	°	°	°	°
31	41.8	42.5	41.7	42.4	- -	41	43.7	41.4	41.2	42.5	43.7
36	44.0	42.8	42.3	42.1	- -	45	44.8	44.0	43.0	44.5	42.7
39	43.3	42.6	42.0	42.2	- -	56	42.0	42.0	41.8	41.3	43.0

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DATE.	Number.	OBJECT.	No. of mic. readings.	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Correct'd.	Barometer.
1861.				° ′ ″	″	″	″	″	″	″	r.	r.	in.
Dec. 13	1	Weisse II, 556	5	23 49 60.2	58.7	63.2	59.8	60.7	56.8	59.90	32.8620	.8624	- -
	2	Weisse II, 575	4	- - - -	- -	- -	- -	- -	- -	- -	30.4162	.4055	- -
	3	Bessel Zone, 391	5	17 49 62.6	60.4	66.8	61.9	63.0	58.0	62.12	29.1778	.1749	30.476
	4	Moon, S. L.	10	18 49 61.9	59.4	65.3	60.4	63.1	57.3	61.23	30.3918	.3758	30.468
	5	Nadir, 3*h.* 10*m.*	6	179 59 60.2	62.2	64.0	63.2	61.4	58.4	61.57*d*	30.5198	.5191	
	6	γ^2 Ursæ Minoris, S. P.	10	291 14 64.4	61.4	66.5	60.6	64.1	60.0	62.83*d*	30.0410	.0496	30.458
14	7	Sun, N. L.	5	61 49 61.7	61.7	66.0	62.8	64.9	60.7	62.97	29.3738	.3783	- -
	8	Sun, S. L.	5	62 19 60.9	61.3	64.9	62.9	64.7	60.0	62.45	26.9220	.9421	30.268
	9	Nadir, 17*h.* 50*m.*	5	179 59 61.0	62.9	65.3	62.9	63.9	58.2	62.37*d*	30.4814	.4804	
	10	Nadir	3	179 59 60.6	62.8	64.8	62.4	64.0	58.4	62.17*d*	30.4853	.4843	
	11	α Lyræ	8	0 14 61.9	59.8	65.8	59.1	64.7	57.2	61.42*d*	31.3183	.3052	30.238
	12	Nadir	5	179 59 59.3	59.4	64.0	57.9	62.7	56.2	59.92*d*	30.4685	.4673	
	13	Polaris	18	310 19 59.6	55.0	60.4	51.5	60.8	56.0	57.22*d*	30.4373	.4327	30.160
	14	Nadir, 1*h.* 25*m.*	5	179 59 57.7	58.1	62.4	56.6	61.9	55.1	58.63*d*	30.4514	.4491	
15	15	Mercury, centre	5	60 24 60.7	59.7	64.1	61.5	63.7	62.1	61.97	28.8178	.8181	30.226
	16	Nadir, 17*h.* 10*m.*	6	179 59 61.0	61.9	64.2	61.7	62.9	59.2	61.82*d*	30.5091	.5084	
16	17	Sun, S. L.	5	62 29 61.5	59.3	64.5	59.2	64.8	59.4	61.45	30.9838	.9901	- -
	18	Sun, N. L.	5	61 59 61.5	59.8	64.7	59.5	65.8	60.8	62.02	33.4264	.4284	30.164
	19	α Lyræ	10	0 14 60.5	57.6	62.4	57.3	62.0	57.7	59.58*d*	31.2977	.2893	- -
	20	Anon., 23*h.* 43. 4*m.*	3	31 34 61.2	57.6	62.0	56.9	63.5	60.5	60.28	33.3450	.3398	30.018
	21	Neptune	5	40 34 59.7	56.4	60.5	56.2	61.3	60.5	59.10	29.2806	.2793	- -
	22	Lacaille, 9726	5	77 34 57.4	53.8	58.9	54.0	61.5	59.5	57.52	34.0162	.0308	30.018
	23	Lacaille, 26	4	72 19 57.6	54.3	58.8	54.6	60.4	59.1	57.47	28.2408	.2422	30.018
	24	B. A. C., 49	4	- - - -	- -	- -	- -	- -	- -	- -	32.3938	.3962	- -
	25	Nadir, 0*h.* 25*m.*	6	179 59 61.4	59.5	62.3	58.0	62.3	60.2	60.62*d*	30.5032	.5023	
	26	Weisse I, 89	5	37 34 62.5	59.3	63.2	58.9	65.5	61.1	61.75	29.9400	.9411	- -
	27	Weisse I, 197	5	37 9 63.2	59.7	64.0	59.0	65.7	61.5	62.18	33.3640	.3620	30.016
	28	Weisse I, 569	4	27 44 62 7	60.5	64.2	59.6	65.3	61.8	62.35	33.1872	.1855	- -
	29	Anon., 1*h.* 34. 6*m.*	3	27 29 65.5	63.2	67.3	62.1	67.9	64.5	65.08	31.4453	.4289	30.016
	30	Weisse II, 575	3	23 49 68.0	66.3	70.3	65.2	70.0	66.3	67.68	30.5307	.5137	30.016
	31	Anon., 2*h.* 48. 4*m.*	3	24 4 62.3	60.0	63.5	58.1	63.9	59.9	61.28	30.7770	.7768	- -
	32	Anon., 2*h.* 48. 6*m.*	4	- - - -	- -	- -	- -	- -	- -	- -	30.6808	.6792	30.018
	33	Bessel Zone, 27	5	16 19 62.5	59.4	64.8	56.9	63.1	59.2	60.98	28.4448	.4408	30.016
	34	Nadir, 3*h.* 5*m.*	6	179 59 61.0	60.2	63.0	59.3	62.4	59.7	60.93*d*	30.5100	.5092	
	35	Rumker, 845	5	14 39 62.7	60.4	65.9	57.4	65.3	58.6	61.72	32.4230	.4133	30.026
	36	ζ Ursæ Minoris, S. P.	10	297 9 62.9	58.5	63.0	54.5	63.9	58.7	60.25	32.0541	.0606	30.032
	37	Bessel Zone, 397	5	11 24 61.3	59.5	64.9	58.3	64.0	58.7	61.12	32.2130	.2093	- -
	38	B. A. C., 1307	5	349 9 60.8	57.4	63.9	56.0	62.8	57.2	59.68	29.3584	.3518	30.044
	39	Weisse IV, 727	5	36 39 60.2	57.9	61.8	57.5	62.6	59.2	59.87	31.7000	.7007	30.046
	40	Groombridge, 892	5	346 14 61.8	57.0	64.0	54.1	62.2	57.9	59.50	30.1628	.1534	30.050
	41	Anon., 4*h.* 56*m.*	3	353 34 61.4	58.0	64.2	56.2	63.8	59.1	60.45	28.6313	.6248	- -
	42	Anon., 4*h.* 57. 4*m.*	4	353 49 58.1	53.1	59.9	51.1	59.2	55.0	56.07	30.7450	.7441	30.052
	43	Nadir, 5*h.* 10*m.*	6	179 59 62.2	62.0	65.2	60.2	64.8	59.8	62.37*d*	30.5281	.5275	
	44	Moon, S. L.	10	15 4 61.4	58.6	63.7	55.2	62.5	56.7	59.68	29.5407	.5362	30.044
17	45	Sun, N. L.	5	61 59 61.3	58.0	62.6	58.7	64.8	62.2	61.27	31.3564	.3564	- -
	46	Sun, S. L.	3	62 29 61.9	59.0	62.8	59.7	65.4	62.0	61.80	28.8437	.8808	30.277
	47	Nadir, 18*h.* 13*m.*	8	179 59 62.3	60.2	63.6	58.9	63.6	61.2	61.62*d*	30.4875	.4866	
	48	Weisse XXIII, 870	4	32 39 62.2	59.2	63.3	56.6	65.6	61.5	61.40	34.2955	.2904	30.240
	49	Neptune	8	40 34 62.3	59.2	63.8	58.1	66.0	62.4	61.97	29.4448	.4441	30.239
	50	Nadir, 0*h.* 15*m*	5	179 59 60.4	58.2	61.8	56.8	62.2	59.2	59.77*d*	30.4694	.4683	
	51	κ Draconis, S. P.	12	289 29 58.1	51.4	56.4	49.0	58.6	56.3	54.97*d*	31.3667	.4134	30.236
	52	Nadir, 0*h.* 25*m.*	5	179 59 57.6	55.3	60.4	52.4	60.0	55.0	56.78*d*	30.4270	.4256	
	53	Polaris	10	310 19 56.2	50.3	55.8	45.7	57.3	53.6	53.15*d*	30.3889	.3863	30.239
18	54	Weisse XXIII, 705	3	31 29 62.2	59.2	64.1	59.2	64.4	61.8	61.83	33.8333	.8346	- -
	55	Weisse XXIII, 749	4	30 44 58.9	55.0	60.9	56.0	60.0	58.6	58.23	33.0900	.0870	30.162
	56	Weisse XXIII, 932	4	32 59 59.0	56.7	60.5	56.5	61.3	58.9	58.82	33.3858	.3834	30.160
	57	Neptune	5	40 34 59.0	56.3	60.4	56.7	60.1	59.9	58.73	29.5486	.5481	30.158
	58	4 Draconis, S. P.	10	297 19 60.1	55.0	60.1	50.9	59.9	56.4	57.07*d*	32.2260	.2360	30.160
	59	Lacaille, 26	3	72 19 61.0	58.4	61.5	58.0	63.1	61.9	60.65	28.2037	.2367	- -
	60	B. A. C., 49	2	- - - -	- -	- -	- -	- -	- -	- -	32.3490	.4058	30.160

PIER THERMOMETERS.

Refer'e No.	U.	L.	N.	S.	In.	Refer'e No.	U.	L	N.	S.	In.
	°	°	°	°	°		°	°	°	°	°
5	39.8	39.7	39.8	38.0	42.4	12	42.0	42.0	42.3	43.0	- -
9	41.0	41.4	40.6	42.2	- -	14	43.0	42.5	42.7	43.8	- -
10	42.3	41.9	41.4	43.2	- -	16	43.8	43.2	43.1	43.8	41.5

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Number.	THERM'S. At.	THERM'S. Ex.	Mic. zero.	CORRECTIONS FOR— Micrometer.	CORRECTIONS FOR— Object.	Corrected Reading.	Observed Declination.	Reduct'n to 1860.0.	Observer.	REMARKS.
	°	°	r.	′ ″	′ ″	° ′ ″	° ′ ″	″		
1	- -	- -	30.4922	− 2 28.97	+ 27.20	23 47 58.13	+15 5 41.12	− 40.85	H.	
2	- -	- -	- - -	+ 5.45	27.26	23 50 32.61	15 3 6.64	40.71		
3	40.0	29.7	- - -	1 22.80	+ 19.88	17 51 44.80	21 1 54.45	− 41.66		
4	39.0	29.6	- - -	7.32	− 31 39.53	18 18 29.02	20 35 10.23			
5										
6	38.8	29.3	- - -	27.82	− 2 37.55	291 12 53.10	+72 19 13.85	+ 39.59		
7	- -	- -	30.4427	1 6.90	+ 1 43.79	61 52 53.66 }	−23 15 31.97	- -	He.	Observed semi-diameter = 16′ 17″. 56.
8	42.0	41.3	- - -	+ 3 40.02	1 46.31	62 25 28.78 }				
9										
10										
11	43.2	45.6	.4463	− 53.98	+ 0.24	0 14 7.68	+38 39 31.57	− 10.92		
12										
13	43.0	37.3	.4697	+ 2.33	− 1 10.72	310 18 48.83	+88 34 50.42	62.40		
14										
15	42.3	41.0	30.4794	+ 1 44.42	+ 1 39.45	60 28 25.84	−21 34 46.59	- -	H.	
16										
17	- -	- -	- - -	− 32.10	1 45.50	62 31 14.85 }	−23 21 18.01	- -	-	Observed semi-diameter = 16′ 17″. 60.
18	44.0	44.8	- - -	3 5.35	1 42.99	61 58 39.66 }				
19	- -	- -	- - -	50.90	0.24	0 14 8.92	+38 39 30.33	10.13		
20	48.5	42.4	.4922	− 2 58.98	36.33	31 32 37.63	+ 7 21 1.62	49.09		
21	- -	- -	- - -	+ 1 16.24	50.51	40 37 5.85	− 1 43 26.60			
22	48.0	42.6	- - -	− 3 42.41	4 21.47	77 35 36.58	38 41 57.33	33.72		
23	48.0	42.5	- - -	+ 2 21.42	3 4.25	72 25 23.14	33 31 43.89	35.26		
24	- -	- -	- - -	− 1 59.68	3 3.47	72 21 1.26	−33 27 22.01	35.28		
25										
26	- -	- -	- - -	+ 34.63	45.70	37 36 22.08	+ 1 17 17.17	44.98		
27	47.2	41.0	- - -	− 3 0.38	44.92	37 7 46.72	1 45 52.53	44.94		
28	- -	- -	- - -	2 49.29	31.27	27 42 44.33	11 10 54.92	46.46		
29	46.8	39.5	- - -	58.88	30.98	27 29 37.18	11 24 2.07	46.47		
30	46.0	38.2	- - -	1.35	26.38	23 50 32.71	15 3 6.54	40.66		
31	- -	- -	- - -	17.89	26.68	24 5 10.07	14 48 29.18	38.51		
32	45.5	38.4	- - -	− 11.76	26.68	24 5 16.20	14 48 23.05	38.47		
33	45.8	39.0	- - -	+ 2 8.93	17.51	16 22 27.42	22 31 11.83	39.13		
34										
35	45.5	39.5	- - -	− 2 0.76	+ 15.56	14 38 16.52	24 15 22.73	− 36.31		
36	45.8	40.0	- - -	1 38.60	− 1 55.59	297 6 26.06	78 12 46.81	+ 34.61		
37	- -	- -	- - -	− 1 47.95	+ 12.00	11 23 25.17	27 30 14.08	− 28.55		
38	45 8	39.5	- - -	+ 1 11.65	− 11.41	349 10 59.92	49 42 39.33	28.32		
39	45.3	38.3	- - -	− 1 15.98	+ 44.44	36 39 28.33	2 14 10.92	20.59		
40	45.2	37.8	- - -	+ 21.27	− 14.64	346 15 6.13	52 38 33.12	19.46		
41	- -	- -	- - -	+ 1 57.35	6.71	353 36 51.09	45 16 48.16	16.32		
42	45.0	37.3	- - -	− 15.86	6.48	353 49 33.73	45 4 5.52	15.98		
43										
44	44.7	38.0	- - -	+ 1 0.09	− 28 42.91	14 37 16.86	+24 16 22.39			
45	- -	- -	30.4576	− 56.49	+ 1 42.02	62 0 46.80 }	−23 23 26.86	- -	He.	Observed semi-diameter = 16′ 19″. 31.
46	51.0	51.9	- - -	+ 1 39.11	1 44.51	62 33 25.42 }				
47										
48	49.3	42.8	.4744	− 3 59.85	38.11	32 36 39.66	+ 6 16 59.59	− 48.70		
49	49.2	42.4	- - -	+ 1 4.76	+ 50.89	40 36 57.62	− 1 43 18.37			
50										
51	48.9	41.5	- - -	− 59.02	− 2 47.36	289 26 8.59	+70 32 29.34	+ 64.56		
52										
53	49.0	40.5	- - -	+ 5.54	− 1 10.40	310 18 48.29	88 34 50.96	− 63.29		
54	- -	- -	30.4734	− 3 31.26	+ 36.23	31 27 6.80	7 26 32.45	48.94	H.	
55	49.1	44.3	.4738	2 44.21	35.19	30 42 49.21	8 10 50.04	49.24		
56	49.0	43.9	.4745	− 3 2.82	38.44	32 57 34.44	+ 5 56 4.81	− 48.62		
57	49.0	43.1	.4757	+ 58.31	+ 50.69	40 36 47.73	− 1 43 8.48			
58	48.8	43.0	.4765	− 1 50.55	− 1 54.63	297 16 11.89	+78 22 32.64	+ 66.10		
59	- -	- -	.4770	+ 2 20.81	+ 3 4.92	72 25 26.38	−33 31 47.13	35.24		
60	48.8	43.0	30.4771	− 2 1.22	+ 3 4.13	72 21 3.56	−33 27 24.31	− 35.27		

PIER THERMOMETERS.

Refer'e No.	U.	L.	N.	S.	In.	Refer'e No.	U.	L.	N.	S.	In.
	°	°	°	°	°		°	°	°	°	°
25	46.3	47.0	47.0	47.2	43.0	47	50.0	48.7	49.7	51.7	- -
34	45.0	45.2	45.5	45.5	43.5	50	49.2	48.8	49.5	49.5	- -
43	45.0	45.2	45.1	45.0	44.0	52	49.0	47.4	47.7	49.1	- -

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DATE.	Number.	OBJECT.	No. of mic. readings.	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Correct'd.	Barometer.
1861.				° ′ ″	″	″	″	″	″	″	r.	r.	in.
Dec. 18	1	Nadir, 0h. 20m.	6	179 59 61.6	59.7	63.1	59.3	61.9	60.0	60.93d	30.4936	.4927	- -
	2	21 Cassiopeæ	10	324 39 60.2	56.0	60.2	52.4	61.0	58.5	58.05d	30.5005	.4811	30.164
	3	Weisse I, 1056	5	35 39 59.1	56.2	61.6	57.1	61.1	57.0	58.68	32.2768	.2751	30.182
	4	Weisse II, 64	5	25 19 58.3	56.1	60.3	55.5	58.5	55.0	57.28	32.9306	.9306	30.184
	5	Bessel Zone, 27, 26	5	16 39 60.1	57.5	63.3	56.8	61.0	56.2	59.15	34.0508	.0432	30.188
	6	Weisse II, 455	5	35 19 59.3	56.9	61.9	57.1	60.6	58.1	58.98	29.0386	.0386	30.190
	7	Weisse II 556	5	23 49 60.7	59.3	63.9	59.8	62.3	59.5	60.92	32.8896	.8896	30.190
	8	Nadir, 2h. 45m.	6	179 59 61.2	63.0	64.9	63.2	63.4	60.3	62.67d	30.5353	.5348	
	9	Nadir, 17h. 20m.	5	179 59 61.4	59.6	66.3	60.7	63.3	58.0	61.55d	30.5010	.5002	- -
19	10	Sun, N. L.	10	61 59 62.0	60.0	66.3	61.2	66.5	61.5	62.91d	28.5410	.5485	30.190
	11	α Lyræ	9	0 14 61.9	58.2	64.7	58.8	63.5	58.1	60.87	31.3180	.3015	30.160
	12	Nadir, 18h. 48m.	5	179 59 61.4	59.9	65.0	59.7	63.1	58.6	61.28d	30.5002	.4993	
	13	Neptune	5	40 29 59.4	56.2	60.4	56.4	61.7	60.4	59.08	24.9436	.9459	30.026
	14	Nadir, 0h 12m	5	179 59 57.8	55.1	59.9	55.0	58.3	56.4	57.08d	30.4408	.4395	
	15	κ Draconis, S. P.	10	289 29 58.4	52.8	58.3	49.5	59.3	54.9	55.53d	31.3835	.4374	30.026
	16	32¹ Camelopard, S. P.	10	303 4 61.0	55.0	62.5	52.7	62.6	57.6	58.57d	30.4866	.6240	- -
	17	32² Camelopard, S. P.	10	- - - -	- -	- -	- -	- -	- -	- -	30.9114	.9326	30.020
	18	Polaris	10	310 19 61.8	56.5	62.6	52.4	63.7	58.3	59.22d	30.5048	.5023	30.015
	19	A Cassiopeæ	10	329 19 62.6	58.7	65.5	56.2	64.3	60.6	61.32d	29.8725	.8539	30.016
	20	Nadir	5	179 59 62.0	60.2	65.3	58.8	64.4	59.2	61.65d	30.5122	.5114	
20	21	Nadir, 17h. 35m.	4	179 59 58.0	58.8	62.4	58.1	61.0	55.7	59.00d	30.4586	.4574	
21	22	Sun, N. L.	10	62 4 56.6	54.1	60.1	54.3	60.7	54.7	56.75d	32.4687	.4743	30.454
	23	α Lyræ	10	0 14 56.0	51.7	57.5	51.7	57.2	52.0	54.35	31.2115	.1933	30.454
	24	Nadir, 18h. 50m.	5	179 59 55.3	56.0	59.4	55.2	58.3	53.0	56.20d	30.4172	.4157	
	25	Nadir, 23h. 17m.	5	179 59 58.7	59.4	63.2	61.2	59.1	55.4	59.50d	30.4734	.4724	
	26	Neptune	6	40 34 58.9	59.0	63.1	60.7	61.9	56.9	60.08	30.1335	.1338	30.476
	27	Lacaille, 5	5	65 54 56.7	54.0	61.7	57.0	59.7	54.9	57.33	28.5682	.5729	30.468
	28	Lacaille, 9	4	- - - -	- -	- -	- -	- -	- -	- -	30.8452	.8663	- -
24	29	Nadir, 17h. 0m.	6	179 59 58.0	57.8	62.5	57.9	60.0	55.2	58.57d	30.4567	.4555	- -
	30	Mercury, centre	5	62 49 57.3	56.5	59.8	57.2	60.4	56.4	57.93	31.9938	.9947	30.216
25	31	Sun, N. L	5	61 59 57.4	57.3	61.2	57.6	61.7	56.8	58.67	31.0280	.0353	- -
	32	Sun, S. L.	5	62 34 56.3	57.0	59.5	57.1	61.4	56.3	57.93	33.3440	.3472	30.198
	33	α Lyræ	10	0 14 59.4	58.8	62.9	58.0	62.8	55.6	59.58d	31.2561	.2464	- -
	34	Nadir, 3h. 45m.	6	179 59 61.6	64.2	66.8	64.8	63.7	58.4	63.25d	30.5378	.5373	
	35	Bessel Zone, 397	5	11 24 62.1	64.2	68.0	65.4	65.3	58.5	63.92	32.2286	.2243	30.290
	36	Bessel Zone, 521	5	15 9 61.8	63.8	66.1	62.2	63.8	56.5	62.37	30.9338	.9314	- -
	37	B. A. C, 1307	5	349 9 60.6	60.4	66.6	60.8	63.5	65.6	62.92	29.4062	.3962	30.288
	38	Weisse IV, 732	5	35 29 60.0	61.2	63.9	63.2	62.7	57.2	61.37	30.9906	.9910	30.290
	39	Groombridge, 892	5	346 14 57.8	57.4	62.9	55.6	60.3	53.0	57.83	30.1442	.1390	- -
	40	Uranus	5	16 24 57.2	58.1	61.5	57.6	58.7	52.4	57.58	29.2536	.2522	30.294
	41	Anonymous, 4h. 55.9m.	4	353 34 59.8	60.5	65.3	60.3	63.8	56.4	61.02	28.6122	.6093	- -
	42	Anonymous. 4h. 57m.	4	353 49 60.0	59.6	64.7	58.7	62.8	55.4	60.20	30.8602	.8494	30.300
	43	Nadir, 5h. 10m.	6	179 59 60.2	63.1	65.2	63.6	62.6	57.4	62.02d	30.5231	.5225	
26	44	Nadir, 16h. 50m.	6	179 59 60.2	59.4	64.4	59.0	63.0	58.0	60.67d	30.4889	.4880	
27	45	Sun, S. L.	5	62 29 59.8	58.2	62.0	58.8	63.3	59.6	60.28	32.9714	.9770	- -
	46	Sun, N. L.	5	61 54 60.5	59.7	63.7	59.2	65.1	61.0	61.53	30.6124	.6247	30.174
	47	α Lyræ	10	0 14 62.7	59.8	65.4	58.6	65.2	59.3	61.83d	31.2923	.2824	- -
	48	Nadir, 19h. 15m.	6	179 59 58.6	58.5	62.4	56.8	61.6	56.5	59.07d	30.4728	.4716	
	49	Nadir, 23h. 30m.	6	179 59 60.0	60.2	64.0	59.8	61.6	56.5	60.35d	30.4919	.4910	
	50	Neptune	5	40 34 59.7	60.3	63.5	60.2	63.0	58.9	60.93	31.5174	.5166	30.270
	51	Lacaille, 1	3	82 39 59.3	59.0	63.5	59.1	62.5	57.6	60.17	28.3850	.3861	- -
	52	Lacaille, 4	3	- - - -	- -	- -	- -	- -	- -	- -	33.8607	.8983	30.264
	53	Lacaille, 78	5	70 19 60.3	60.8	65.0	61.8	65.0	60.7	62.27	32.4364	.4398	- -
	54	Lacaille, 84	5	- - - -	- -	- -	- -	- -	- -	- -	28.9480	.9510	30.264
	55	Lacaille, 155	5	81 9 59.3	59.6	64.2	59.8	62.8	59.2	60.82	31.8684	.8785	- -
	56	Lacaille, 164	2	- - - -	- -	- -	- -	- -	- -	- -	28.2475	.2490	30.290
	57	Lacaille, 241	3	64 19 58.5	57.9	63.2	58.8	61.8	56.5	59.45	27.3630	.3628	30.300
	58	Anonymous, 2h. 36.9m.	5	67 19 57.9	59.8	64.6	60.1	63.2	58.0	60.60	26.9308	.9359	- -
	59	Lacaille, 846	4	- - - -	- -	- -	- -	- -	- -	- -	30.0675	.0786	- -
	60	γ² Fornacis	5	- - - -	- -	- -	- -	- -	- -	- -	28.3688	.3703	30.316

PIER THERMOMETERS.

Refer'e No.	U.	L.	N.	S.	In	Refer'e No.	U.	L.	N.	S.	In.
	°	°	°	°	°		°	°	°	°	°
1	47.0	47.0	46.4	47.2	46.1	14	47.8	47.0	48.0	48.1	- -
8	43.7	44.7	44.8	43.0	46.1	20	47.5	46.5	47.2	47.7	- -
9	46.5	44.9	45.3	46.0	- -	21	46.8	45.5	45.8	46.8	- -
12	48.3	47.3	47.7	48.0	- -	24	45.4	45.0	45.7	46.0	- -

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Number.	THERM'S. At.	THERM'S. Ex.	Mic. zero.	CORRECTIONS FOR— Micrometer.	CORRECTIONS FOR— Object.	Corrected Reading.	Observed Declination.	Reduct'n to 1860.0.	Observer.	REMARKS.
	°	°	r.	′ ″	′ ″	° ′ ″	° ′ ″	″		
1	- -	- -	- - -	- - -	- - -	- - - -	- - - -	- -	H.	
2	48.0	40.9	30.4796	— 0.09	— 42.30	324 39 15.66	+74 14 23.59	— 64.91		
3	46.0	37.6	.4878	1 52.32	+ 43.08	35 38 49.44	3 14 49.81	41.54		
4	46.0	37.2	.4884	2 33.50	28.43	25 17 52.21	13 35 47.04	43.93		
5	45.5	37.0	.4897	— 3 43.35	17.95	16 36 33.75	25 17 5.50	44.71		
6	45.5	36.5	.4906	+ 1 31.27	42.76	35 22 13.01	3 31 26.24	38.41		
7	45.0	36.2	.4912	— 2 30.75	26.60	23 47 56.77	+15 5 42.48	40.84		
8										
9	- -	- -	- - -	- - -	- - -	- - - -	- - - -	- -	He.	
10	46.6	46.7	30.4757	+ 2 1.13	18 1.13	62 20 5.17	—23 26 25.92			
11	47.5	49.7	.4790	— 51.70	0.24	0 14 9.41	+38 39 29.84	— 9.21		
12										
13	47.4	42.7	.4855	+ 5 48.19	+ 50.51	40 36 37.78	— 1 42 58.53			
14										
15	47.2	41.8	- - -	— 59.83	— 2 46.13	289 26 9.57	+70 32 30.32	+ 64.85		
16	- -	- -	- - -	8.70	1 30.85	303 3 19.02	84 9 39.77	65.09		
17	47.0	41.5	- - -	28.10	1 30.87	303 2 59.60	84 9 20.35	+ 65.09		
18	47.0	41.4	- - -	— 1.07	1 9.78	310 18 48.37	88 34 50.88	— 63.71		
19	47.0	41.4	- - -	+ 39.70	— 35.16	329 20 5.86	+69 33 33.39	61.22		
20										
21										
22	45.0	32.4	30.4734	— 2 5.77	+ 18 5.56	62 20 56.54	—23 27 17.29			
23	45.0	32.8	.4763	— 45.07	0.25	0 14 9.53	+38 39 29.72	8.56		
24										
25										
26	40.0	28.6	.4802	+ 21.77	52.77	40 36 14.62	— 1 42 35.37			
27	- -	28.2	- - -	+ 1 59.88	2 17.91	65 59 15.12	27 5 35.87	46.04		
28	- -	- -	- - -	— 24.27	2 17.66	65 56 50.72	27 3 11.47	46.05		
29	- -	- -	- - -	- - -	- - -	- - - -	- - - -	- -	H.	
30	42.0	34.0	30.4783	1 35.31	1 52.10	62 50 14.72	23 56 35.47	- -	-	Exceedingly unsteady.
31	- -	- -	- - -	35.01	1 45.50	62 1 9.16 }	—23 23 48.17	- -	-	Observed semi-diameter = 16′ 18″. 26.
32	42.0	35.2	- - -	3 0.32	1 48.07	62 33 45.68 }				
33	- -	- -	- - -	48.29	0.24	0 14 11.53	+38 39 27.72	7.30		
34										
35	36.0	28.6	.4880	1 49.13	12.39	11 23 27.18	27 30 12.07	28.92		
36	- -	- -	- - -	— 27.87	+ 16.69	15 9 51.19	23 43 48.06	26.10		
37	36.0	28.4	- - -	+ 1 8.62	— 11.75	349 10 59.79	49 42 39.46	29.85		
38	36.0	28.3	- - -	— 31.62	+ 43.86	35 30 13.61	3 23 25.64	17.16		
39	- -	- -	- - -	+ 21.92	— 15.07	346 15 4.68	52 38 34.57	21.19		
40	36.0	27.9	- - -	1 17.66	+ 18.05	16 26 33.29	22 27 5.96			
41	- -	- -	- - -	+ 1 58.08	— 6.90	353 36 52.20	45 16 47.05	17.66		
42	35.8	27.7	- - -	— 22.71	— 6.67	353 49 30.82	+45 4 8.43	17.17		
43										
44										
45	- -	- -	30.4836	2 36.72	+ 1 47.36	62 29 10.92 }	—23 19 14.95	- -	-	Observed semi-diameter = 16′ 16″. 72.
46	43.0	36.5	- - -	8.87	1 44.82	61 56 37.48 }				
47	- -	- -	- - -	50.20	0.24	0 14 11.87	+38 39 27.38	6.77		
48										
49										
50	38.0	30.3	.4864	— 1 4.75	52.20	40 34 48.38	— 1 41 9.13			
51	- -	- -	.4868	+ 2 12.02	7 30.54	82 49 42.73	43 56 3.48	31.91		
52	38.0	30.2	.4868	— 3 34.45	7 25.23	82 43 50.95	43 50 11.70	31.94		
53	- -	- -	.4872	— 2 2.75	2 49.69	70 20 49.21	31 27 9.96	35.15		
54	38.0	29.9	.4873	+ 1 36.54	2 50.25	70 24 29.06	31 30 49.81	35.11		
55	- -	- -	.4878	— 1 27.43	6 17.52	81 14 50.91	42 21 11.66	31.88		
56	38.1	29.7	.4879	+ 2 20.71	6 20.04	81 18 41.57	42 25 2.32	31.80	-	Interrupted by clouds.
57	38.0	29.7	.4885	3 16.45	2 7.42	64 25 23.32	25 31 44.07	36.22	-	Interrupted by clouds.
58	- -	- -	.4928	3 43.55	2 26.26	67 26 10.41	28 32 31.16	27.43		
59	- -	- -	.4929	26.03	2 25.87	67 22 52.50	28 29 13.25	27.25		
60	37.7	30.3	30.4931	+ 2 13.42	+ 2 26.08	67 24 40.10	—28 31 0.85	— 26.57	-	Ext. thermometer recorded 25°. 3.

PIER THERMOMETERS.

Refer'e No.	U.	L.	N.	S.	In.	Refer'e No.	U.	L.	N.	S.	In.
	°	°	°	°	°		°	°	°	°	°
25	39.6	39.4	39.0	39.2	- -	44	43.1	42.5	43.0	43.4	39.1
29	42.9	42.1	42.0	42.5	41.2	48	43.0	42.0	42.7	42.8	39.4
34	38.0	38.0	37.4	37.4	40.9	49	37.1	37.0	37.8	36.1	39.1
43	38.4	38.3	37.6	37.4	40.9						

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DATE.	Number.	OBJECT.	No. of mic. readings.	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Correct'd.	Barometer.
1861.				° ′ ″	″	″	″	″	″	″	r.	r.	in.
Dec. 27	1	Nadir, 3h. 50m.	6	179 59 61.2	63.7	65.4	65.4	62.9	59.4	63.00d	30.5435	.5432	- -
	2	Bessel Zone, 521	5	15 9 60.4	61.1	64.8	59.6	61.6	55.8	60.55	30.9228	.9212	30.334
	3	Anon., 4h. 11m.	5	352 9 59.7	59.8	65.0	59.6	62.4	55.8	60.38	30.4748	.4697	30.338
	4	Weisse IV, 732	5	35 29 58.9	59.4	62.1	59.6	60.8	55.7	59.42	30.9736	.9741	30.350
	5	Uranus	5	16 24 58.9	59.4	64.0	58.5	61.0	53.9	59.28	28.9858	.9833	30.340
28	6	α Lyræ	11	0 14 56.4	55.1	60.6	56.2	59.8	52.7	56.80d	31.2194	.2030	30.414
	7	Nadir, 18h. 50m.	5	179 59 53.0	53.8	57.4	54.0	56.0	50.1	54.05d	30.3967	.3952	
29	8	Nadir, 17h. 50m.	6	179 59 59.9	60.8	64.6	60.2	62.5	57.2	60.87d	30.5127	.5119	- -
	9	Mercury, centre	7	63 24 58.2	57.6	61.2	57.5	62.4	58.0	59.15	29.2537	.2544	30.178
	10	α Lyræ	10	0 14 58.6	58.1	62.8	57.2	62.7	56.0	59.23d	31.2434	.2347	
30	11	Sun, N. L.	5	61 44 58.7	60.0	63.0	59.4	64.0	60.7	60.97	31.0432	.0537	
	12	Sun, S. L.	5	62 14 61.5	61.9	64.7	61.9	66.3	62.5	63.13	28.6228	.6265	30.170
	13	Neptune	5	40 34 60.0	59.5	62.8	59.7	64.0	61.0	61.17	32.3874	.3859	30.198
	14	Lacaille, 1	4	82 39 59.1	59.0	61.5	59.3	62.4	59.9	60.20	28.2375	.2438	
	15	Lacaille, 4	4	- - - -	- -	- -	- -	- -	- -	- -	33.8120	.8742	30.200
	16	Lacaille, 78	5	70 19 62.6	62.7	65.0	64.0	67.5	65.3	64.52	32.4334	.4352	
	17	Lacaille, 84	5	- - - -	- -	- -	- -	- -	- -	- -	28.9310	.9347	30.200
	18	Lacaille, 155	5	81 9 63.1	63.4	66.4	62.9	66.9	65.2	64.65	31.7634	.7769	
	19	Lacaille, 164	5	- - - -	- -	- -	- -	- -	- -	- -	28.1564	.1621	30.204
	20	Lacaille, 241	5	64 19 62.2	61.7	64.6	62.1	65.5	62.4	63.08	27.3706	.3715	30.206
	21	Nadir, 0h. 55m.	6	179 59 60.0	61.2	62.8	60.0	63.2	58.9	61.02d	30.5231	.5224	
	22	Polaris	10	310 19 60.4	57.2	61.3	53.2	62.2	57.4	58.62d	30.5272	.5203	30.204
	23	A Cassiopeæ	10	329 19 59.2	57.2	61.8	55.1	61.8	57.9	58.83d	29.8440	.8371	30.208
	24	Weisse I, 1056	5	35 39 58.7	57.3	60.2	57.3	61.5	56.2	58.53	32.2406	.2390	30.218
	25	Weisse II, 64	5	25 19 59.8	59.9	62.6	58.5	61.3	57.4	59.92	32.9934	.9934	30.220
	26	Santini, 138	5	29 49 60.0	58.8	62.3	59.0	64.1	59.0	60.53	32.7400	.7407	30.220
	27	Weisse II, 333	5	33 24 59.4	59.6	61.4	59.1	62.8	58.5	60.13	28.9176	.9184	- -
	28	Nadir, 2h. 30m.	6	179 59 61.1	62.4	63.5	61.4	63.4	59.4	51.87d	30.5353	.5349	
31	29	Nadir, 18h. 0m.	6	179 59 57.8	58.0	61.3	56.8	60.2	55.4	58.25d	30.4701	.4690	
	30	α Lyræ	10	0 14 58.8	54.5	61.6	52.3	60.9	55.9	57.33d	31.2029	.1946	- -

PIER THERMOMETERS.

Refer'e No.	U.	L.	N.	S.	In.	Refer'e No.	U.	L.	N.	S.	In.
1	37°.0	36°.6	37°.8	34°.7	39°.6	21	39°.4	39°.3	39°.9	40°.0	36°.4
7	40.2	39.5	40.0	39.3	- -	28	38.5	38.0	38.5	38.6	36.8
8	39.0	38.7	38.5	39.6	34.8	29	43.4	42.1	42.8	44.0	38.8

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Number.	THERM'S. At.	THERM'S. Ex.	Mic. zero.	CORRECTIONS FOR— Micrometer.	CORRECTIONS FOR— Object.	Corrected Reading.	Observed Declination.	Reduct'n to 1860.0.	Observer.	REMARKS.
	°	°	r.	′ ″	′ ″	° ′ ″	° ′ ″	″		
1	- -	- -	- - -	- - -	- - -	- - - -	- - - -	- -	H.	
2	37.0	29.0	30.4963	— 26.70	+ 16.67	15 9 50.52	+23 43 48.73	— 26.27		
3	37.0	29.0	.4965	+ 2.26	— 8.46	352 9 54.18	46 43 45.07	29.09		
4	36.5	28.9	.4974	— 29.95	+ 43.89	35 30 13.36	3 23 25.89	16.90		
5	36.4	28.9	.4978	+ 1 35.19	18.04	16 26 52.51	22 26 46.74			
6	40.0	32.8	30.4899	— 44.82	0.25	0 14 12.23	+38 39 27.02	6.49	He.	
7										
8	- -	- -	- - -	- - -	- - -	- - - -	- - - -	- -	H.	
9	39.0	40.3	30.4981	+ 1 18.17	1 53.74	63 28 11.06	—24 34 31.81			
10	- -	- -	- - -	— 46.30	0.24	0 14 13.17	+38 39 26.08	5.94		
11	- -	- -	- - -	— 34.92	1 43.03	61 46 9.08	—23 8 48.44	- -	-	Observed semi-diameter = 16′ 18″.61.
12	40.5	40.9	- - -	+ 1 57.64	1 45.53	62 18 46.30				
13	41.7	38.0	.5057	— 1 58.18	51.22	40 33 54.21	1 40 14.96			
14	- -	- -	- - -	+ 2 22.17	7 22.09	82 49 44.46	43 56 5.21	32.00		
15	41.6	38.0	- - -	— 3 31.72	7 16.79	82 43 45.27	43 50 6.02	32.01		
16	- -	- -	- - -	— 2 1.27	2 46.51	70 20 49.76	31 27 10.51	35.10		
17	41.5	38.0	- - -	+ 1 38.75	2 47.06	70 24 30.33	31 30 51.08	35.07		
18	- -	- -	- - -	— 1 19.89	6 10.04	81 14 54.80	42 21 15.55	31.81		
19	41.3	37.8	- - -	+ 2 27.32	6 12.52	81 18 44.49	42 25 5.24	31.78		
20	41.0	37.4	- - -	+ 3 16.99	+ 2 5.03	64 25 25.10	—25 31 45.85	36.04		
21										
22	41.0	36.3	- - -	— 0.91	— 1 10.99	330 18 46.72	+88 34 52.53	65.16		
23	40.5	34.8	- - -	+ 42.03	— 35.88	329 20 4.98	69 33 34.27	62.26		
24	39.8	34.5	- - -	— 1 48.94	+ 43.43	35 38 53.02	3 14 46.23	40.53		
25	39.7	33.7	- - -	2 36.35	28.68	25 17 52.25	13 35 47.00	43.31		
26	39.4	32.6	- - -	— 2 20.47	34.83	29 48 14.89	9 5 24.36	40.48		
27	- -	32.3	- - -	+ 1 39.77	40.20	33 27 20.10	5 26 19.15	38.85		
28										
29										
30	- -	- -	30.4968	— 43.86	+ 0.24	0 14 13.71	+38 39 25.54	— 5.64		

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OBSERVATIONS

WITH THE

EQUATORIAL,

1861.

Hosted by Google

ECHO, (TITANIA.)

DATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT. A.	B.	C.	Mean.	MIC.	PLANET—STAR. Δ α	Δ mic.
1861.		s.	s.	s	h. m. s.	w. revs.	m. s.	revs.
Jan. 4	Weisse XXIII, 809	22.0	33.0	44.0	7 40 33.00	1 41.729	+ 0 55.00	— 50.082
	Echo	- -	28.0	- -	41 28.00	4 48.916		
	Weisse XXIII, 809	30.5	40.5	51.5	51 40.83	1 41.115	0 55.50	50.530
	Echo	- -	- -	47.0	52 36.33	4 48.750		
	Weisse XXIII, 809	45.5	56.5	7.0	8 32 56.33	1 38.739	0 56.67	— 49.321
	Echo	43.0	- -	- -	33 53.00	4 45.165		
5	Weisse XXIII, 809	21.5	32.5	43.5	7 3 32.50	1 38.680	+ 2 18.75	— 18.864
	Echo	- -	51.5	2.0	5 51.25	2 40.541		
	Weisse XXIII, 809	28.0	39.0	50.0	8 39.00	1 38.088	2 19.00	18.747
	Echo	- -	58.0	- -	10 58.00	2 39.832		
	Weisse XXIII, 809	38.5	49.5	0.0	15 49.33	1 37.920	2 18.67	18.820
	Echo	- -	8.5	- -	17 8.00	2 39.737		
	Weisse XXIII, 809	15.5	26.0	37.2	48 26.33	1 35.289	2 20.45	18.034
	Echo	35.5	47.0	- -	50 46.78	2 36.320		
	Weisse XXIII, 809	32.5	43.5	54.1	52 43.37	1 35.172	+ 2 21.63	— 17.783
	Echo	- -	5.0	- -	54 5.00	2 35.952		

RESULTS.

Jan. 4:

Corr. Chron. — 2 m. 56.32 s.

	α h. m. s.	δ ° ′ ″
Weisse XXIII, 809,	23 40 15.56	— 2 16 52.67

Echo—Weisse XXIII, 809,

		Δα m. s.	Δδ ′ ″
M. T.	7 59 42.79	+ 0 55.72	—12 48.13
	Δt +	.15	
	Δρ —	.02	— 0.59
	p +	.14	+ 2.35

5:

Corr. Chron. — 2 m. 57.36 s.

	α h. m. s.	δ ° ′ ″
Weisse XXIII, 809,	23 40 15.56	— 2 16 52.65

Echo—Weisse XXIII, 809,

		Δα m. s.	Δδ ′ ″
M. T.	7 24 48.45	+ 2 19.70	— 4 43.55
	Δt +	.38	
	Δρ —	.01	— 0.18
	p +	.11	+ 2.35

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MELPOMENE.

DATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT. A.	B.	C.	Mean.	MIC.	PLANET—STAR. Δ a	Δ mic.
1861.		s.	s.	s.	h. m. s.	w. revs.	m. s.	revs.
Feb. 12	Melpomene - - -	3.5	13.9	24.9	5 55 14.03	2 52.702		
	Weisse VIII, 1132 -	9.6	20.3	31.4	55 20.43	3 50.916		
	(☉ 9) - - - - -	34.9	46.3	57.3	55 46.17	2 40.119		
	Weisse VIII, 1146 -	35.9	47.3	58.2	55 47.13	2 47.590	— 0 33.10	— 5.112
	Melpomene - - -	29.9	41.0	52.3	59 41.07	3 39.838		
	Weisse VIII, 1146 -	3.6	14.6	25.8	6 0 14.67	3 24.928	0 33.60	4.910
	Melpomene - - -	40.0	51.2	2.3	2 51.17	3 39.948		
	Weisse VIII, 1146 -	14.0	25.3	36.1	3 25.13	3 35.019	0 33.96	4.929
	Melpomene - - -	31.0	42.5	53.3	5 42.27	3 40.245		
	Weisse VIII, 1146 -	5.2	16.3	27.3	6 16.27	3 35.380	0 34.00	4.865
	Melpomene - - -	37.7	48.8	59.8	7 48.77	3 40.190		
	Weisse VIII, 1146 -	11.8	22.9	33.8	8 22.83	3 35.365	0 34.06	4.825
	Melpomene - - -	39.2	50.6	1.7	11 50.50	3 40.312		
	Weisse VIII, 1146 -	13.7	24.8	36.0	12 24.83	3 35.572	0 34.33	4.740
	Melpomene - - -	39.7	51.0	2.1	16 50.95	3 40.432		
	Weisse VIII, 1146 -	13.9	25.3	36.2	17 25.13	3 35.861	0 34.20	4.571
	Melpomene - - -	59.7	11.3	22.2	20 11.07	3 40.440		
	Weisse VIII, 1146 -	34.5	45.9	56.7	20 45.70	3 35.992	0 34.63	4.448
	Melpomene - - -	50.6	1.7	12.8	22 1.70	3 40.589		
	Weisse VIII, 1146 -	25.1	36.3	47.5	22 36.30	3 36.111	0 34.60	4.478
	Melpomene - - -	47.2	58.5	9.3	23 58.33	3 40.590		
	Weisse VIII, 1146 -	21.6	32.9	43.9	24 32.80	3 36.185	0 34.47	4.405
	Melpomene - - -	46.2	57.8	8.7	28 57.57	3 40.631		
	Weisse VIII, 1146 -	21.2	32.9	43.5	29 32.53	3 36.387	0 34.96	4.244
	Melpomene - - -	30.3	41.4	51.9	30 41.20	3 40.769		
	Weisse VIII, 1146 -	5.2	16.4	27.3	31 16.30	3 36.540	0 35.10	4.229
	Melpomene - - -	29.9	40.9	51.8	33 40.87	3 40.785		
	Weisse VIII, 1146 -	4.9	15.5	27.5	34 15.97	3 36.692	0 35.10	4.093
	Melpomene - - -	53.9	5.1	16.2	59 5.07	3 41.281		
	Weisse VIII, 1146 -	29.8	41.0	52.5	59 41.10	3 37.762	0 36.03	3.519
	Melpomene - - -	58.9	10.6	21.5	7 2 10.33	3 41.315		
	Weisse VIII, 1146 -	35.4	46.7	57.7	2 46.60	3 37.910	0 36.27	3.405
	Melpomene - - -	45.1	56.3	7.7	3 56.37	3 41.400		
	Weisse VIII, 1146 -	21.2	32.5	43.8	4 32.50	3 37.982	0 36.13	3.418
	Melpomene - - -	16.2	27.2	38.6	6 27.33	3 41.349		
	Weisse VIII, 1146 -	52.5	3.8	14.8	7 3.70	3 38.051	0 36.37	3.298
	Melpomene - - -	11.1	22.4	33.4	8 22.30	3 41.498		
	Weisse VIII, 1146 -	47.7	58.8	9.8	8 58.77	3 38.048	0 36.47	3.450
	Melpomene - - -	52.9	4.2	15.3	10 4.13	3 41.455		
	Weisse VIII, 1146 -	29.3	40.7	51.7	10 40.57	3 38.085	0 36.44	3.370
	Melpomene - - -	46.2	57.8	8.4	11 57.47	3 41.495		
	Weisse VIII, 1146 -	22.9	33.9	45.0	12 33.93	3 38.361	— 0 36.46	— 3.134
13	Melpomene - - -	51.6	2.8	13.9	6 20 2.77	2 38.752		
	Weisse VIII, 1146 -	20.2	31.2	42.5	21 31.30	4 41.569	— 1 28.53	+ 28.710
	Melpomene - - -	55.4	6.8	17.8	23 6.67	2 38.913		
	Weisse VIII, 1146 -	23.9	35.2	46.4	24 35.17	4 41.740	1 28.50	28.720
	Melpomene - - -	25.4	36.6	47.7	25 36.57	2 38.989		
	Weisse VIII, 1146 -	53.7	5.3	16.3	27 5.10	4 41.875	— 1 28.53	+ 28.779

RESULTS.

m. s.
Corr. Chron. — 0 57.12

	α	δ
	h. m. s.	° ′ ″
Weisse VIII, 1146,	8 44 48.27	+13 45 14.99

Melpomene—Weisse VIII, 1146,

		Δα	Δδ
	h. m. s.	m. s.	′ ″
Sid T.	6 35 7.50	— 0 35.01	— 1 4.12
	Δρ	.00	— .02
	p —	.18	+ 2.63

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MELPOMENE.

DATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT. A	B.	C	Mean.	MIC.	PLANET—STAR. Δ α	Δ mic.
		s.	s.	s.	h. m. s.	w. revs.	m. s.	revs.
1861. Feb. 13	Melpomene	37.5	48.7	0.0	6 28 48.73	2 39.081		
	Weisse VIII, 1146	6.2	17.7	28.8	30 17.57	4 42.067	− 1 28.84	+ 28.879
	Melpomene	5.8	17.5	28.3	31 17.20	2 39.140		
	Weisse VIII, 1146	34.3	45.4	56.8	32 45.50	4 42.122	1 28.30	28.875
	Melpomene	33.9	45.6	56.4	33 45.30	2 39.119		
	Weisse VIII, 1146	2.8	14.5	25.5	35 14.27	4 42.205	1 28.97	28.979
	Melpomene	3.3	14.0	26.0	36 14.43	2 39.246		
	Weisse VIII, 1146	32.7	44.1	55.1	37 43.97	4 42.273	1 29.54	28.920
	Melpomene	32.3	43.9	54.9	38 43.70	2 39.259		
	Weisse VIII, 1146	1.6	12.9	24.1	40 12.87	4 42.528	1 29.17	29.162
	Melpomene	1.3	12.5	23.6	41 12.47	2 39.400		
	Weisse VIII, 1146	30.4	41.5	53.1	42 41.67	4 42.563	1 29.20	29.056
	Melpomene	41.4	52.7	3.8	43 52.63	2 39.501		
	Weisse VIII, 1146	10.6	21.9	33.1	45 21.87	4 42.752	1 29.24	29.144
	Melpomene	15.6	26.9	38.2	46 26.90	2 39.492		
	Weisse VIII, 1146	45.1	56.4	7.6	47 56.37	4 42.831	1 29.47	29.232
	Melpomene	58.2	9.8	20.8	49 9.60	2 39.488		
	Weisse VIII, 1146	27.9	39.2	50.4	50 39.17	4 42.942	1 29.57	29.347
	Melpomene	0.2	11.6	22.7	55 11.50	2 39.591		
	Weisse VIII, 1146	30.1	41.2	52.3	56 41.20	4 43.190	1 29.70	29.492
	Melpomene	37.7	48.9	59.7	57 48.77	2 39.623		
	Weisse VIII, 1146	7.2	18.5	29.5	59 18.40	4 43.231	1 29.63	29.501
	Melpomene	27.0	38.2	49.4	7 0 38.20	2 39.702		
	Weisse VIII, 1146	57.0	8.4	19.4	2 8.27	4 43.359	1 30.07	29.550
	Melpomene	2.9	14.3	25.3	3 14.17	2 39.691		
	Weisse VIII, 1146	32.9	44.2	55.4	4 44.17	4 43.498	1 30.00	29.700
	Melpomene	47.9	59.4	10.4	6 59.23	2 39.795		
	Weisse VIII, 1146	18.2	29.7	40.7	8 29.53	4 43.498	1 30.30	29.596
	Melpomene	25.7	37.1	48.2	9 37.00	2 39.859		
	Weisse VIII, 1146	56.2	7.3	18.8	11 7.43	4 43.682	1 30.43	29.716
	Melpomene	14.7	25.9	37.2	12 25.93	2 39.858		
	Weisse VIII, 1146	44.9	56.3	7.5	13 56.23	4 43.772	1 30.30	29.807
	Melpomene	53.6	5.0	16.0	15 4.87	2 39.702		
	Weisse VIII, 1146	24.3	35.5	46.7	16 35.50	4 43.798	− 1 30.63	+ 29.989
15	Weisse VIII, 936	17.9	29.2	40.6	6 46 29.23	5 34.971	+ 5 19.74	+ 9.005
	Weisse VIII, 941	30.4	41.7	52.8	46 41.63	3 35.470		
	Melpomene	37.7	49.1	0.1	51 48.97	4 43.032		
	(☼ 10.5)	48.2	59.6	10.5	51 59.43	5 32.200		
	Weisse VIII, 936	6.1	17.6	28.7	55 17.47	5 35.272	5 19.90	9.247
	Melpomene	25.8	37.4	48.9	7 0 37.37	4 43.091		
	(* 10.5)	36.6	48.2	59.2	0 48.00	5 32.142		
	Weisse VIII, 936	9.9	21.4	32.3	4 21.20	5 35.521	5 19.87	9.437
	Melpomene	29.9	41.3	52.0	9 41.07	4 43.150		
	(☼ 10.5)	40.9	..	3.3	9 52.10	5 32.601		
	Weisse VIII, 936	16.9	28.0	39.3	11 28.07	5 35.788	5 19.03	9.656
	Melpomene	35.9	..	58.3	16 47.10	4 43.198		
	(☼ 10.5)	47.6	58.9	9.7	16 58.73	5 32.898		
	Weisse VIII, 936	5.9	16.9	28.0	20 16.93	5 36.149	+ 5 19.02	+ 9.836
	Melpomene	24.7	..	47.2	25 35.95	4 43.379		
	(☼ 10.5)	36.5	..	58.9	25 47.70	5 33.142		

RESULTS.

Corr. Chron. — 0 m. 58.13 s.

	α h. m. s.	δ ° ′ ″
Weisse VIII, 1146,	8 44 48.27	+13 45 17.34

Melpomene—Weisse VIII, 1146,

		Δα m. s.	Δδ ′ ″
Sid. T.	6 45 59.70	− 1 29.40	+ 7 29.68
	Δρ	.00	.16
	p	− .15	+ 2.55

Corr. Chron. — 1 m. 0.68 s.

	α h. m. s.	δ ° ′ ″
Weisse VIII, 936,	8 36 13.80	+14 7 8.58

Melpomene—Weisse VIII, 936,

		Δα m. s.	Δδ ′ ″
Sid. T.	7 12 7.08	+ 5 19.42	+ 2 26.66
	Δρ	+ .00	.05
	p	− .11	+ 2.38

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MELPOMENE.

DATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT. A.	B.	C.	Mean.	MIC	PLANET—STAR. Δ α	Δ mic.
		s.	s.	s.	h. m. s.	w. revs.	m. s.	revs.
1861. Feb. 15	Weisse VIII, 936	45.8	57.2	8.4	7 28 57.13	5 36.401	+ 5 18.97	+ 10.078
	Melpomene	4.4	..	27.8	34 16.10	4 43.389		
	(✡ 10.5)	16.7	..	38.9	34 27.80	5 33.509		
20	(✡ 10)	4.5	15.7	27.2	6 42 15.80	3 37.348		
	Melpomene	5.9	17.2	28.4	42 17.17	2 36.420		
	2640, Rumker	52.9	4.3	15.6	43 4.27	1 45.085	— 0 47.10	— 8.338
	(✡ 10)	1.8	13.2	24.5	46 13.17	4 40.620		
	Melpomene	2.9	14.1	25.0	46 14.00	3 39.640		
	2640, Rumker	50.2	1.6	12.7	47 1.50	2 44.248	0 47.50	8.250
	Melpomene	15.2	26.7	37.5	7 5 26.47	3 40.010		
	2640, Rumker	3.3	14.6	25.8	6 14.57	2 45.040	0 48.10	7.828
	Melpomene	16.3	27.3	38.6	9 27.40	3 39.880		
	2640, Rumker	4.3	15.7	26.3	10 15.43	3 32.228	0 48.03	7.652
	Melpomene	27.0	38.2	49.3	34 38.17	4 30.622		
	2640, Rumker	16.1	27.2	37.9	35 27.07	3 36.298	0 48.90	7.358
	Melpomene	9.7	20.0	32.0	36 20.57	3 43.662		
	2640, Rumker	58.9	9.8	20.9	37 9.87	3 36.290	0 49.30	7.372
	Melpomene	39.9	50.7	1.7	38 50.77	3 43.685		
	2640, Rumker	28.8	40.0	50.7	39 39.83	3 36.610	0 49.06	7.075
	Melpomene	52.3	3.4	14.2	42 3.30	3 43.950		
	2640, Rumker	41.4	52.4	3.4	42 52.40	3 36.592	0 49.10	7.358
	Melpomene	17.2	28.4	39.3	44 28.30	3 43.762		
	2640, Rumker	6.8	17.9	28.8	45 17.83	3 36.621	0 49.53	7.141
	Melpomene	27.2	38.2	48.9	46 38.14	3 43.672		
	2640, Rumker	16.4	27.7	38.2	47 27.43	3 36.602	— 0 49.29	— 7.070

RESULTS.

m. s.
Corr. Chron. — 1 5.73

	α	δ
	h. m. s.	° ′ ″
2640 Rumker,	8 38 22.21	+14 51 41.12

Melpomene—2640 Rumker,

	Δα	Δδ
	m. s.	′ ″
Sid. T. 7 53 32.70	— 0 48.59	— 1 55.95
Δρ	.00	— .04
ρ	— .08	+ 2.30

PROSERPINE.

DATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT. A.	B.	C.	Mean.	MIC.	PLANET—STAR. Δ α	Δ mic.
		s.	s.	s.	h. m. s.	w. revs.	m. s.	revs.
1861. Feb. 21	(☉ 12)	7.7	19.5	30.5	6 42 19.23	2 38.819		
	Proserpine	33.5	..	57.0	42 45.25	2 37.240		
	B. Z, 278, 116	50.5	..	14.0	44 2.25	3 37.848	— 1 17.00	+ 13.466
	Proserpine	39.0	50.5	2.1	47 50.53	2 37.362		
	B. Z., 278, 116	56.2	8.0	19.5	49 7.90	3 38.030	1 17.37	13.526
	Proserpine	38.5	50.5	2.0	57 50.33	2 37.828		
	B. Z, 278, 116	56.5	8.5	19.7	58 8.23	3 38.408	— 1 17.90	+ 13.438
27	Proserpine	34.2	46.4	57.8	7 1 46.13	3 39.689		
	B. Z, 344, 65	59.2	11.4	22.9	3 11.17	5 36.936		
	B. Z, 344, 66	5.2	16.8	28.6	3 16.87	4 39.830	— 1 30.74	+ 13.175
	Proserpine	47.8	59.8	11.4	5 59.67	3 39.901		
	B. Z, 344, 65	13.2	25.0	36.9	7 25.03	5 37.032		
	B. Z, 344, 66	19.0	31.2	42.4	7 30.87	4 40.031	1 31.20	13.164
	Proserpine	11.7	23.5	35.3	11 23.50	3 39.929		
	B. Z, 344, 66	43.1	54.8	6.4	12 54.77	4 40.360	1 31.27	13.465
	Proserpine	49.4	1.0	12.4	15 0.93	3 39.892		
	B. Z., 344, 66	20.7	32.5	43.9	16 32.37	4 40.363	1 31.44	13.405
	Proserpine	25.6	37.3	49.2	20 37.37	3 40.192		
	B. Z, 344, 66	56.9	8.9	20.5	22 8.77	4 40.498	— 1 31.40	+ 13.340
28	Proserpine	36.7	48.3	0.3	6 56 48.43	3 34.458		
	B. Z, 344, 66	47.4	59.6	11.2	58 59.40	4 39.372	— 2 10.97	+ 17.948
	Proserpine	17.3	29.0	40.3	7 4 28.87	3 34.441		
	B. Z., 344, 66	27.9	40.2	51.8	6 39.97	4 39.555	2 11.10	18.148
	Proserpine	4.0	16.0	27.7	8 15.90	3 34.801		
	B. Z., 344, 66	15.7	27.9	39.4	10 27.67	4 39.668	2 11.77	17.901
	Proserpine	29.4	40.2	51.9	11 40.50	3 34.912		
	B. Z, 344, 66	40.3	51.9	3.9	13 52.03	4 39.800	2 11.53	17.922
	Proserpine	58.7	10.4	21.9	15 10.33	3 34.950		
	B. Z., 344, 66	10.1	22.0	33.9	17 22.00	4 39.915	2 11.67	17.999
	Proserpine	27.8	39.8	51.3	18 39.63	3 34.961		
	B. Z, 344, 66	39.0	50.8	2.3	20 50.70	4 39.950	2 11.07	18.023
	Proserpine	47.2	59.0	10.3	22 58.83	3 35.189		
	B. Z., 344, 66	58.9	10.7	22.3	25 10.63	4 40.238	2 11.80	18.083
	Proserpine	56.9	8.8	20.3	27 8.67	3 35.340		
	B. Z., 344, 66	8.7	20.7	32.3	29 20.57	4 40.398	2 11.90	18.092
	Proserpine	1.1	12.8	23.9	31 12.60	3 35.310		
	B. Z, 344, 66	12.9	24.9	36.7	33 24.83	5 40.600	2 12.23	18.324
	Proserpine	4.9	16.9	28.2	45 16.67	3 35.710		
	B. Z, 344, 66	16.9	28.9	40.7	47 28.83	4 40.830	— 2 12.16	+ 18.154

RESULTS.

Corr. Chron. — 1 m. 15.56 s.

	α h. m. s.	δ ° ′ ″
B. Z., 278, 116,	8 55 24.76	+ 23 9 21.16

Proserpine — B. Z., 278, 116,

		Δα m. s.	Δδ ′ ″
Sid. T.	6 48 21.99	— 1 17.42	+ 3 27.13
	Δρ	.00	.07
	p —	.09	+ 1.56

Corr. Chron. — 1 m. 21.80 s.

	α h. m. s	δ ° ′ ″
B. Z., 344, 66,	8 51 7.33	+ 23 19 51.35

Proserpine—B. Z., 344, 66,

		Δα m. s.	Δδ ′ ″
Sid. T.	7 9 36.72	— 1 31.21	+ 3 24.57
	Δρ	.00	.06
	p —	.12	+ 1.44

Corr. Chron. — 2 m. 11.62 s.

	α h. m. s.	δ ° ′ ″
B. Z., 344. 66,	8 51 7.19	+ 23 19 51.45

Proserpine—B. Z., 344, 66,

		Δα m. s.	Δδ ′ ″
Sid. T.	7 16 41.07	— 2 11.62	+ 4 37.56
	Δρ	.00	.08
	p —	.11	+ 1.43

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COMET 1861, I.

DATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT. A.	B.	C.	Mean.	MIC.	COMET—STAR. Δ α	Δ mic.
1861.		s.	s.	s.	h. m. s.	w. revs.	m. s.	revs.
April 10	A. Z., 117, 39	10.0	31.9	52.7	11 0 31.53	4 38.280	+ 0 29.24	+ 19.214
	A. Z., 117, 38	23.0	44.9	6.2	0 44.70	5 48.030		
	Comet	39.7	0.7	21.9	1 0.77	3 32.100		
	(✡ 9)	40.9	2.8	24.0	2 2.53	3 39.280		
	A. Z., 117, 39	13.6	34.9	55.9	15 34.80	4 40.122	0 25.60	21.894
	Comet	39.6	0.4	21.2	16 0.40	3 31.262		
	A. Z., 117, 39	0.9	22.9	43.4	19 22.40	4 40.468	0 25.03	22.212
	Comet	26.7	47.2	8.4	19 47.43	2 44.149		
	A. Z., 117, 39	42.1	2.9	24.3	22 3.10	4 40.850	0 23.97	22.685
	Comet	5.9	27.4	47.9	22 27.07	2 44.058		
	A. Z., 117, 39	17.8	- -	0.2	25 39.00	4 40.958	0 23.13	22.901
	Comet	40.8	1.6	24.0	26 2.13	2 43.950		
	A. Z., 117, 39	50.9	- -	33.9	34 12.40	4 41.621	0 21.95	23.782
	Comet	13.5	- -	55.2	34 34.35	2 43.732		
	A. Z., 117, 39	49.6	- -	31.9	36 10.75	4 41.735	0 21.35	24.248
	Comet	10.9	- -	53.3	36 32.10	2 43.380		
	A. Z, 117, 39	9.5	31.2	51.9	54 30.87	4 43.202	0 17.10	26.483
	Comet	27.3	48.2	8.4	54 47.97	2 42.612		
	A. Z., 117, 39	53.9	15.3	35.9	57 15.03	4 43.462	+ 0 16.72	+ 26.717
	Comet	10.8	- -	52.7	57 31.75	2 42.638		
11	A. Z., 125, 32	3.6	25.4	46.9	9 33 25.30	4 44.415		
	A. Z., 125, 35	- -	42.7	4.8	34 42.90	4 44.659	+ 5 54.43	+ 29.141
	Comet	16.6	36.8	58.6	40 37.33	2 41.411		
	A. Z., 125, 32	34.4	55.2	17.3	42 55.63	4 45.315		
	A. Z., 125, 35	- -	13.3	34.8	44 14.10	4 45.491	5 53.05	30.293
	Comet	- -	6.2	28.0	50 7.15	2 41.091		
	A. Z., 125, 32	42.7	4.5	25.9	52 4.37	4 46.072		
	A. Z., 125, 35	0.1	21.8	43.2	53 21.70	4 46.471	5 51.43	31.653
	Comet	52.0	13.0	34.4	58 13.13	2 40.711		
	A. Z., 125, 32	27.8	49.2	10.9	10 0 49.30	4 47.049		
	A. Z., 125, 35	44.8	6.9	28.2	2 6.63	4 47.239	5 48.37	32.884
	Comet	34.0	55.1	15.9	7 55.00	2 40.248		
	A. Z., 125, 32	40.0	2.4	23.8	23 2.07	4 48.980		
	A. Z., 125, 35	58.5	19.8	41.5	24 19.93	4 49.349	+ 5 42.97	+ 35.423
	Comet	41.9	2.5	24.3	30 2.90	2 39.819		
14	A. Z., 125, 8	55.4	18.9	41.0	12 45 18.43	2 43.091		
	Comet	6.8	29.8	- -	46 29.58	2 41.729		
	A. Z., 125, 9	35.7	48.9	- -	46 48.58	2 47.239	— 0 19.00	+ 5.510
	(✡ 10)	57.1	20.9	43.1	47 20.37	3 44.618		
	Comet	42.7	5.6	28.7	50 5.73	2 41.262		
	A. Z, 125, 9	3.8	27.0	50.3	50 27.07	2 47.410	0 21.34	6.148
	Comet	17.6	41.8	4.5	52 41.30	2 41.080		
	A. Z., 125, 9	40.0	3.5	27.2	53 3.57	2 47.541	0 22.27	6.461
	Comet	49.9	13.9	37.0	55 13.60	2 40.752		
	A. Z., 125, 9	13.0	36.4	1.4	55 36.93	2 47.768	0 23.33	7.016
	Comet	41.2	5.7	28.8	57 5.23	2 40.654		
	A. Z., 125, 9	4.5	27.0	52.4	57 27.97	2 47.899	0 22.74	7.245
	Comet	18.2	43.2	6.7	12 59 42.70	2 40.622		
	A. Z., 125, 9	41.3	4.1	29.8	13 0 5.07	2 48.178	— 0 22.37	+ 7.556

RESULTS.

April 10: m. s. Corr. Chron. — 2 12.14

	α (h. m. s.)	δ (° ′ ″)
A. Z., 117, 39,	17 7 34.07	+ 59 20 14.51

Comet—A. Z., 117, 39,

		Δα (m. s.)	Δδ (′ ″)
Sid. T.	11 27 39.41	+ 0 22.68	+ 5 58.85
	Δρ	— .02	.12
	p	— 1.24	+ 3.17

11: m. s. Corr. Chron. — 2 14.69

	α (h. m. s.)	δ (° ′ ″)
A. Z., 125, 35,	16 56 42.52	+ 59 59 58.02

Comet—A. Z., 125, 35,

		Δα (m. s.)	Δδ (′ ″)
Sid. T.	9 59 8.41	+ 5 50.05	+ 8 9.97
	Δρ	— .01	.30
	p	— 1.27	+ 6.06

14: m. s. Corr. Chron. — 2 17.39

	α (h. m. s.)	δ (° ′ ″)
A. Z., 125, 9,	16 39 36.14	+ 62 33 56.95

Comet—A. Z., 125, 9,

		Δα (m. s.)	Δδ (′ ″)
Sid. T.	12 56 10.35	— 0 24.17	+ 1 54.18
	Δρ	.01	+ .03
	p	— 1.31	— 1.44

(Continued.)

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COMET 1861, I.

DATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT. A.	B.	C.	Mean.	MIC.	COMET—STAR. Δ α	Δ mic.
1861.		s.	s.	s.	h. m. s.	w. revs.	m. s.	revs.
Apr. 14	Comet	27.9	51.7	15.0	13 1 51.53	2 40.441		
	A. Z., 125, 9	54.6	18.0	41.0	2 17.87	2 48.290	— 0 26.34	+ 7.849
	Comet	27.3	50.3	14.0	3 50.53	2 40.120		
	A. Z., 125, 9	54.2	17.8	40.7	4 17.57	2 48.405	0 27.04	8.285
	Comet	25.9	- -	12.9	7 49.40	2 39.668		
	A. Z., 125, 9	- -	18.0	40.7	8 17.20	2 48.659	0 27.80	8.991
	Comet	24.4	47.7	11.2	9 47.77	2 39.605		
	A. Z., 125, 9	53.6	17.2	40.9	10 17.23	2 48.839	— 0 29.46	+ 9.234
17	A. Z, 123, 2	55.5	20.8	46.6	8 34 20.97	3 42.878	+ 2 22.03	— 27.468
	(✡ 9)	58.0	23.8	49.0	36 23.60	1 38.785		
	Comet	18.0	43.5	7.5	36 43.00	5 40.485		
	A. Z., 123, 2	28.0	54.0	19.0	42 53.67	3 43.583	2 17.33	26.203
	(✡ 9)	30.0	55.5	21.0	44 55.50	1 39.426		
	Comet	46.0	11.0	36.0	45 11.00	5 39.925		
	A. Z., 123, 2	31.0	57.0	22.0	48 56.67	3 44.050	2 13.83	25.736
	(✡ 9)	33.5	59.0	24.0	50 58.83	1 39.862		
	Comet	44.5	11.0	36.0	51 10.50	5 39.925		
	A. Z., 123, 2	58.5	24.0	49.2	54 23.90	3 44.432	2 10.60	25.277
	Comet	10.0	34.5	59.0	56 34.50	5 39.848		
	A. Z., 123, 2	54.5	21.0	45.5	9 0 20.33	3 44.872	2 7.27	24.367
	Comet	2.5	27.8	52.5	9 2 27.60	5 39.378		
	A. Z., 123, 2	16.5	42.5	8.0	4 42.33	3 45.291	2 5.34	23.610
	Comet	22.0	48.5	12.5	6 47.67	5 39.040		
	A. Z., 123, 2	46.0	12.0	37.0	9 11.67	4 32.621	2 2.50	23.154
	Comet	49.0	14.5	39.0	11 14.17	5 38.709		
	A. Z., 123, 2	24.3	50.5	16.0	13 50.27	4 32.910	2 0.23	22.712
	Comet	25.0	51.0	15.5	13 50.50	5 38.556		
	A. Z., 123, 2	24.0	51.0	16.0	17 50.33	4 33.173	1 58.07	22.399
	Comet	23.5	48.7	13.0	19 48.40	5 38.506		
	A. Z, 123, 2	45.0	- -	35.7	22 10.35	4 33.531	+ 1 55.98	— 21.293
	Comet	41.0	6.5	31.5	24 6.33	5 37.758		
19	Comet	59.7	25.7	52.4	10 35 25.93	3 32.372		
	(✡ 104) W.	- -	19.9	46.1	36 19.88	5 47.144	— 0 53.95	+ 44.633
	A. Z., 116, 120	- -	- -	29.5	45 3.03	5 36.152	9 37.10	33.641
	A. Z., 116, 121	- -	31.2	57.7	45 31.33	5 35.850	10 5.40	33.339
	Comet	41.5	7.4	34.5	47 7.83	3 31.660		
	(✡ 104) W.	42.3	10.0	36.3	48 9.53	5 48.042	1 1.70	46.243
	Comet	43.1	9.3	35.3	51 9.23	2 44.541		
	(✡ 9)	- -	- -	12.0	51 45.93	1 48.085		
	(✡ 104) W.	47.3	14.8	39.7	52 13.97	5 48.430	1 4.74	46.847
	Comet	56.0	22.9	50.0	11 8 22.97	2 43.872		
	(✡ 104) W.	13.0	39.7	6.2	9 39.63	5 49.655	1 16.66	48.741
	Comet	59.3	25.4	53.1	11 25.93	2 43.869		
	(✡ 104) W.	17.8	45.3	11.2	12 44.77	5 49.852	— 1 18.84	+ 48.941

RESULTS.

m. s.
Corr. Chron. — 7 25.97

	α h. m. s.	δ ° ′ ″
A. Z., 123, 2,	16 4 50.14	+65 3 4.33

Comet 1861—A. Z., 123, 2,

	h. m. s.	Δα m. s.	Δδ ′ ″
M. T.	8 55 21.40	+ 2 7.32	— 6 12.28
	Δt	+ .35	
	Δρ	— .03	— .11
	p	— 1.90	+ 2.54

m. s.
Corr. Chron. — 2 33.60

	α h. m. s.	δ ° ′ ″
(✡ 104) W.,	15 36 9.65	+66 14 18.10
A. Z., 116, 120,	15 44 53.21	66 17 7.05
A. Z., 116, 121,	15 45 21.72	+66 17 12.50

Comet—A. Z., 116, 120,

	h. m. s.	Δα m. s.	Δδ ′ ″
Sid. T.	10 32 52.33	— 9 37.10	+ 8 37.05
	Δρ	.04	.15
	p	— 2.11	+ 1.46

Comet—A. Z., 116, 121,

		—10 5.40	+ 8 32.41
	Δρ	.04	.14
	p	— 2.12	+ 1.46

Comet—(✡ 104) W.,

	h. m. s.		
Sid. T.	10 52 9.10	— 1 7.18	+12 3.29
	Δρ	.08	.20
	p	— 3.03	+ .33

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COMET 1861, I.

DATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT. A.	B.	C.	Mean.	MIC.	COMET—STAR. Δ α	Δ mic.
1861.		s.	s.	s.	h. m. s.	w. revs.	m. s.	revs.
Apr. 20	A. Z., 116, 70	49.5	. .	44.4	10 26 16.95	5 36.032		
	A. Z., 116, 71	1.9	30.8	57.7	26 30.13	1 34.782	+ 5 23.00	— 72.497
	Comet	24.9	. .	. .	31 53.13	5 47.318		
	A. Z., 116, 70	7.9	34.9	2.7	10 37 35.17	5 37.021		
	A. Z., 116, 71	20.8	48.8	15.5	37 48.37	1 35.651	5 12.70	72.471
	Comet	33.7	1.3	. .	43 1.07	5 48.161		
	A. Z., 116, 70	33.9	2.0	29.2	46 1.70	5 37.518		
	A. Z., 116, 71	46.7	14.5	42.5	46 14.57	1 36.200	5 6.10	70.491
	Comet	52.9	20.7	48.4	51 20.67	5 46.730		
	A. Z., 116, 70	27.2	54.8	22.1	54 54.70	5 38.100		
	A. Z., 116, 71	39.7	8.4	35.5	55 7.87	1 37.010	4 58.86	69.609
	Comet	38.9	7.7	33.6	11 0 6.73	5 46.658		
	A. Z., 116, 70	37.7	5.8	32.9	3 5.47	5 38.712		
	A. Z., 116, 71	50.6	18.6	46.0	3 18.40	1 37.522	4 51.43	68.881
	Comet	42.4	9.7	37.4	8 9.83	5 46.442		
	A. Z., 116, 70	36.8	4.8	32.2	11 4.60	5 39.250		
	A. Z., 116, 71	50.3	17.5	45.5	11 17.77	1 37.950	4 45.03	67.936
	Comet	35.6	2.5	30.3	16 2.80	5 45.925		
	A. Z., 116, 70	45.6	13.9	41.1	19 13.53	5 39.820		
	A. Z., 116, 71	58.9	26.5	54.4	19 26.60	1 38.510	+ 4 38.47	— 67.463
	Comet	37.1	5.7	32.4	24 5.07	5 46.012		
25	4365, B. A. C.	16.9	45.0	12.7	12 48 44.87	3 34.992	+11 57.63	— 38.514
	Comet	14.8	43.7	9.0	13 0 42.50	5 43.645		
	4365, B. A. C.	51.3	19.3	46.9	4 19.17	2 48.922	+11 38.40	— 39.838
	Comet	29.9	57.7	25.1	15 57.57	5 45.802		
26	Comet	3.9	30.1	56.9	10 40 30.30	5 34.270		
	2936, Radcliffe	42.5	7.9	34.7	50 8.37	3 35.765	— 9 38.07	+ 28.366
	Comet	49.3	15.1	41.6	53 15.33	5 31.410		
	2936, Radcliffe	42.0	8.7	35.3	11 3 8.67	3 35.032	9 53.34	26.239
	Comet	55.8	20.8	47.8	5 21.47	5 28.680		
	2936, Radcliffe	3.3	29.7	55.9	15 29.63	3 34.739	10 8.16	23.802
	Comet	15.8	40.4	6.8	17 41.00	4 42.550		
	2936, Radcliffe	38.5	4.9	31.3	28 4.90	3 34.085	10 23.90	21.499
	Comet	55.9	21.0	48.7	31 21.87	4 38.610		
	2936, Radcliffe	36.2	2.0	28.8	42 2.33	3 32.395	—10 40.46	+ 19.249
27	Comet	27.5	51.6	17.2	10 38 52.10	5 50.262		
	2857, Radcliffe	. .	1.4	25.9	45 1.35	1 22.238		
	2860, Radcliffe	23.6	48.9	13.9	45 48.80	1 24.500	— 6 56.70	+ 85.723
	Comet	35.0	57.9	24.3	50 59.07	5 50.132		
	2857, Radcliffe	. .	21.4	46.5	57 21.92			
	2860, Radcliffe	44.1	8.8	34.2	58 9.03	1 27.681	7 9.96	82.412
	Comet	49.3	13.3	38.7	11 2 12.77	5 50.270		
	2857, Radcliffe	24.7	49.7	13.9	8 49.43			
	2860, Radcliffe	11.7	36.9	1.9	9 36.83	1 30.472	7 24.06	79.759
	Comet	30.0	54.7	20.0	12 54.90	5 46.998		
	2860, Radcliffe	6.9	31.3	55.5	20 31.23	1 30.132	7 36.33	76.827
	Comet	51.4	16.9	40.9	23 16.40	5 44.190		
	2860, Radcliffe	40.4	5.4	30.2	31 5.33	1 29.595	— 7 48.93	+ 74.556

RESULTS.

Corr. Chron. — 2 m. s. 35.96

	α h. m. s.	δ ° ′ ″
A. Z., 116, 71,	15 12 13.51	+67 22 15.34

Comet—A. Z., 116, 71,

	h. m. s.	Δα m. s.	Δδ ′ ″
Sid. T.	10 56 38.26	+ 4 59.37	—17 54.45
	Δρ	— .09	.30
	p	— 2.11	— 1.17

Corr. Chron. — 2 m. s. 47.71

	α h. m. s.	δ ° ′ ″
4365, B. A. C,	12 54 44.19	+67 20 44.24

Comet—4365, B. A. C,

	h. m. s.	Δα m. s.	Δδ ′ ″
Sid. T.	13 5 32.32	+11 48.01	—10 2.11
	Δρ	.00	.17
	p	+ .12	— 9.88

Corr. Chron. — 2 m. s. 50.10

	α h. m. s.	δ ° ′ ″
2936, Radcliffe,	12 50 00.24	+66 11 29.22

Comet—2936, Radcliffe,

	h. m. s.	Δα m. s.	Δδ ′ ″
Sid. T.	11 2 47.85	—10 8.79	+ 6 6.27
	Δρ	.00	+ .07
	p	— 1.17	— 8.21

Corr. Chron. — 2 m. s. 52.46

	α h. m. s.	δ ° ′ ″
2860, Radcliffe,	12 18 40.88	+64 34 18.46

Comet—2860, Radcliffe,

	h. m. s.	Δα m. s.	Δδ ′ ″
Sid. T.	10 58 46.59	— 7 23.20	+20 27.32
	Δρ	.00	+ .41
	p	— .87	— 8.70

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COMET 1861, I.

DATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT. A.	B.	C.	Mean.	MIC.	COMET—STAR. Δ α	Δ mic.
		s.	s.	s.	h. m. s.	w. revs.	m. s.	revs.
1861. Apr. 28	Comet	- -	19.4	43.2	10 18 19.57	3 36.570		
	A. Z., 186, 59	2.9	26.3	49.9	23 26.37	1 33.085	— 5 6.80	+ 33.346
	Comet	43.4	5.4	28.9	26 5.90	3 34.369		
	(✡ 10)	18.5	41.9	5.5	26 41.97			
	(✡ 10)	- -	51.7	15.6	26 52.40	2 34.369		
	A. Z., 186, 59	- -	- -	44.9	31 21.90	1 32.849	5 16.00	31.381
	Comet	37.2	59.7	23.5	34 0.13	3 31.590		
	A. Z., 186, 59	0.0	23.2	47.0	39 23.40	1 32.608	5 23.27	28.843
	Comet	48.0	10.5	33.7	42 10.73	2 41.598		
	A. Z., 186, 59	21.3	43.9	8.3	47 44.50	1 32.389	5 33.77	26.212
	Comet	49.3	12.0	36.3	50 12.53	2 38.775		
	A. Z., 186, 59	30.6	54.2	18.0	55 54.27	1 32.248	— 5 41.74	+ 23.530
29	3497, Rumker	9.9	32.3	54.5	10 30 32.23	4 44.022	+10 23.67	— 34.990
	Comet	34.4	55.7	17.6	40 55.90	2 34.925		
	3497, Rumker	56.2	17.9	40.4	43 18.17	4 40.841	10 11.46	39.866
	Comet	7.7	29.4	51.8	53 29.63	1 43.870		
	3497, Rumker	44.7	6.8	29.2	56 6.90	4 40.749	9 58.75	44.879
	Comet	- -	5.7	27.8	11 6 5.65	1 38.765		
	3497, Rumker	56.0	17.9	40.3	9 18.07	4 42.380	+ 9 45.73	— 50.045
	Comet	42.7	3.3	25.4	19 3.80	1 35.230		
30	2582, Radcliffe	42.3	2.4	22.8	11 59 2.50	5 36.360	+ 7 59.90	— 38.796
	A. Z., 97, 103	- -	1.9	21.9	12 6 1.80	4 35.272		
	Comet	- -	2.2	22.8	7 2.40	2 40.522		
	A. Z., 97, 104	- -	13.7	32.9	7 13.20	2 41.520		
	2582, Radcliffe	52.9	13.5	33.9	11 13.43	5 36.441	7 47.87	44.109
	A. Z., 97, 103	51.9	12.3	32.9	18 12.37	4 35.350		
	Comet	39.9	2.7	21.3	19 1.30	2 35.290		
	A. Z., 97, 104	4.0	24.0	44.6	19 24.20	3 28.880		
	2582, Radcliffe	5.5	25.7	46.3	22 25.83	5 56.665	7 37.20	49.394
	A. Z., 97, 103	4.2	24.4	45.3	29 24.63	4 35.432		
	Comet	42.4	3.8	22.9	30 3.03	2 30.229		
	A. Z., 97, 104	16.1	36.3	57.1	30 36.50	3 29.118		
	2582, Radcliffe	54.9	15.0	36.3	33 15.40	5 36.930	+ 7 28.20	— 54.726
	A. Z., 97, 103	53.9	14.1	34.9	40 14.30	4 35.929		
	Comet	- -	43.7	3.9	40 43.60	1 42.165		
	A. Z., 97, 104	- -	26.1	46.9	41 26.25	2 42.165		
May 2	2472, Radcliffe	7.9	25.3	42.9	10 55 25.37	3 45.025	+ 9 5.30	— 41.266
	A. Z., 95, 20	- -	39.0	56.8	58 39.17	3 51.082		
	Comet	13.8	30.4	47.8	11 4 30.67	1 33.620		
	2472, Radcliffe	34.7	51.9	9.8	12 52.13	4 31.908	8 53.30	50.483
	A. Z., 95, 20	48.7	6.3	23.8	16 6.27	4 37.639		
	Comet	28.1	45.2	3.0	21 45.43	1 24.320		
	2472, Radcliffe	56.0	13.0	30.8	27 13.27	5 37.060	8 43.53	59.031
	Comet	39.5	56.7	14.2	35 56.80	1 37.990		
	2472, Radcliffe	27.9	45.2	2.8	38 45.30	5 37.128	8 35.10	65.507
	Comet	3.0	20.2	38.0	47 20.40	1 31.582		
	2472, Radcliffe	35.0	52.3	10.1	49 52.47	5 37.311	+ 8 28.26	— 71.368
	Comet	3.9	21.4	36.9	58 20.73	4 25.904		

RESULTS.

Corr. Chron. + 2 m. 48.42 s.

	α (h. m. s.)	δ (° ′ ″)
A. Z., 186, 59,	11 50 5.40	+63 0 17.91

Comet—A. Z., 186, 59,

	Δα (m. s.)	Δδ (′ ″)
Sid. T. 10 36 58.19	— 5 24.32	+ 7 20.52
Δρ	.01	+ .14
p —	.76	— 8.32

Corr. Chron. + 2 m. 45.06 s.

	α (h. m. s.)	δ (° ′ ″)
3497, Rumker,	11 9 17.00	+61 1 43.01

Comet—3497, Rumker,

	Δα (m. s.)	Δδ (′ ″)
Sid. T. 11 2 38.80	+10 4.90	—10 52.35
Δρ	.00	.21
p —	.13	— 8.31

Corr. Chron. + 2 m. 42.69 s.

	α (h. m. s.)	δ (° ′ ″)
2582, Radcliffe,	10 47 58.19	+58 14 47.14

Comet—2582, Radcliffe,

	Δα (m. s.)	Δδ (′ ″)
Sid. T. 12 26 55.27	+ 7 43.29	—11 58.61
Δρ —	.02	.36
p +	.88	— 6.07

Corr. Chron. + 2 m. 38.09 s.

	α (h. m. s.)	δ (° ′ ″)
2472, Radcliffe,	10 10 10.98	+52 5 58.28

Comet—2472, Radcliffe,

	Δα (m. s.)	Δδ (′ ″)
Sid. T. 11 36 12.90	+ 8 47.10	—14 44.21
Δρ	.01	.26
p +	.67	— 4.40

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COMET 1861, I.

DATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT. A.	B.	C.	Mean.	MIC.	COMET—STAR. Δ α	Δ mic.
		s.	s.	s.	h. m. s.	w. revs.	m. s.	revs.
1862. May 4	B. Z., 497, 29	46.7	1.9	16.9	11 29 1.83	2 40.175	+ 2 0.70	— 3.775
	(✡ 10)	- -	30.9	- -	30 30.83	2 31.261		
	(✡ 10)	- -	37.3	52.4	30 37.28	2 35.109		
	Comet	47.5	2.2	17.9	31 2.53	2 36.400		
	(✡ 9)	46.5	1.5	17.4	33 1.80	3 32.765		
	B. Z., 497, 29	55.1	10.4	25.6	38 10.37	2 40.802	1 56.53	10.235
	(✡ 10)	24.6	39.4	55.0	39 39.67	2 31.415		
	(✡ 10)	30.7	45.6	2.5	39 46.27	2 35.392		
	Comet	51.9	- -	21.9	40 6.90	1 47.570		
	(✡ 9)	55.2	9.9	25.4	42 10.17	3 33.029		
	B. Z., 497, 29	50.0	5.3	20.7	46 5.33	2 40.869	1 51.47	15.562
	Comet	42.3	56.5	11.6	47 56.80	1 42.310		
	(✡ 9)	50.9	5.8	21.0	50 5.90	2 45.952		
	B. Z, 497, 29	1.0	15.9	31.3	52 16.07	2 41.102	1 48.43	18.313
	Comet	49.8	4.3	19.4	54 4.50	1 39.792		
	(✡ 9)	1.5	16.0	31.5	56 16.33	2 46.291		
	B. Z., 497, 29	35.2	50.1	5.3	59 50.20	2 41.245	1 44.20	22.939
	Comet	19.1	34.7	49.4	12 1 34.40	1 35.309		
	(✡ 9)	34.8	50.0	5.4	3 50.07	3 33.510		
	B. Z., 497, 29	31.5	46.3	1.4	6 46.40	3 28.651	1 40.70	27.192
	Comet	12.3	26.7	42.3	8 27.10	1 31.320		
	(✡ 9)	31.2	46.5	1.5	10 46.40	3 33.921		
	B. Z., 497, 29	24.2	39.0	54.4	14 39.20	4 37.018	1 36.27	31.796
	Comet	0.6	15.5	30.3	16 15.47	2 31.115		
	(✡ 9)	9.7	24.3	40.2	16 24.73	1 29.192		
	(✡ 9)	24.3	39.1	54.7	18 39.37	4 41.912		
	B. Z., 497, 29	13.6	28.8	44.4	21 28.93	4 37.128	1 32.80	36.148
	Comet	46.4	1.6	17.2	23 1.73	1 43.875		
	(✡ 9)	13.9	29.2	44.3	25 29.13	4 42.485		
	B. Z, 497, 29	55.9	11.0	26.4	29 11.10	4 37.525	1 28.40	41.189
	Comet	24.4	39.5	54.6	30 39.50	1 39.231		
	(✡ 9)	56.0	11.2	26.6	34 11.27	4 42.530		
	B. Z, 497, 29	52.5	7.4	23.0	35 7.63	4 37.739	+ 1 25.27	— 44.482
	Comet	17.7	33.0	48.0	36 32.90	1 36.152		
	(✡ 9)	52.5	7.3	23.4	39 7.73	4 42.792		
8	B. Z, 406, 7	52.7	9.3	25.4	11 40 9.13	1 38.222	+ 0 1.80	+ 33.027
	Comet	58.7	11.3	22.8	40 10.93	3 41.388		
	B. Z., 406, 7	25.0	40.7	57.9	43 41.20	1 38.491	+ 0 0.47	29.920
	Comet	29.6	41.5	53.9	43 41.67	3 38.550		
	B. Z., 406, 7	35.0	51.4	7.7	47 51.37	3 36.130	— 0 1.00	28.721
	Comet	38.6	49.9	2.5	47 50.37	5 34.990		
	B. Z., 406, 7	54.7	11.0	27.5	50 11.07	3 36.151	0 1.47	27.300
	Comet	57.3	9.5	22.0	50 9.60	5 33.590		
	B. Z., 406, 7	54.7	10.8	27.0	51 10.83	3 36.120	0 1.96	26.416
	Comet	56.9	8.8	20.9	51 8.87	5 32.675		
	Comet	48.6	0.7	13.0	53 0.77	5 31.630		
	B. Z., 406, 7	51.5	3.6	15.8	53 3.63	3 36.130	0 2.86	24.361
	Comet	58.3	10.4	23.4	55 10.70	5 30.205		
	B. Z., 406, 7	1.5	13.6	26.0	55 13.70	3 36.336	0 3.00	23.730
	Comet	32.8	44.0	56.8	56 44.53	5 29.521		
	B. Z., 406, 7	35.9	47.9	0.4	56 48.07	3 36.443	— 0 3.54	+ 22.939

RESULTS.

Corr. Chron. + 2 33.54 (m. s.)

	α (h. m. s.)	δ (° ′ ″)
B. Z., 497, 29,	9 47 53.84	+44 38 13.41

Comet—B. Z, 497, 29,

		Δα (m. s.)	Δδ (′ ″)
Sid. T.	12 7 31.72	+ 1 42.48	— 6 26.73
	Δρ	.00	.10
	p	+ .97	— .11

Corr. Chron. + 2 24.47 (m. s.)

	α (h. m. s.)	δ (° ′ ″)
B. Z., 406, 7,	9 9 40.14	+29 9 48.10

Comet—B. Z., 406, 7,

		Δα (m. s.)	Δδ (′ ″)
Sid. T.	11 56 46.28	— 0 2.85	+ 6 14.06
	Δρ	.00	.12
	p	+ .97	+ 6.46

(Continued.)

COMET, 1861, I.

DATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT. A.	B.	C.	Mean.	MIC.	COMET—STAR. Δ α	Δ mic.
1861.		s.	s.	s.	h. m. s	w. revs.	m. s.	revs.
May 8	Comet - - - -	14. 0	25. 7	38. 2	11 58 25. 97	4 45. 451		
	B. Z., 406, 7 - - -	15. 2	30. 6	42. 9	58 29. 57	3 36. 459	— 0 3. 60	+ 21. 026
	Comet - - - -	2. 1	14. 7	26. 7	12 0 14. 50	4 44. 322		
	B. Z., 406. 7 - - -	7. 1	19. 6	32. 0	0 19. 57	3 36. 597	0 5. 07	20. 759
	Comet - - - -	27. 3	39. 8	51. 9	3 39. 67	4 42. 358		
	B. Z., 406. 7 - - -	33. 2	45. 5	58. 0	3 45. 57	2 49. 422	0 5. 90	18. 829
	B. Z., 406. 12 - -	25. 4	38. 0	50. 2	7 37. 87	1 49. 519		
	Comet - - - -	38. 5	50. 9	4. 3	9 51. 23	3 51. 778		
	B. Z., 406. 7 - - -	47. 0	59. 2	11. 8	9 59. 33	2 49. 510	— 0 8. 10	+ 15. 126
	B. Z , 406. 11 - -	6. 0	18. 9	30. 7	13 18. 53	2 39. 910		
	(✿) - - - - - -	18. 8	- -	- -	13 31. 33	1 39. 910		
	B. Z , 406. 12 - -	40. 0	51. 0	3. 7	13 51. 57	1 49. 750		
9	Comet - - - -	21. 3	33. 9	45. 2	11 57 33. 47	4 35. 400		
	Madrass, 651 - -	34. 1	46. 6	58. 5	12 1 46. 40	4 36. 685	— 4 12. 93	+ 1. 285
	Comet - - - -	23. 8	34. 7	46. 5	4 35. 00	4 39. 338		
	Madrass, 651 - -	37. 7	49. 6	1. 4	8 49. 57	4 36. 451	4 14. 57	— 2. 887
	Comet - - - -	29. 3	41. 4	52. 9	10 41. 20	4 42. 419		
	Madrass, 651 - -	45. 7	58. 1	9. 9	14 57. 90	4 36. 107	4 16. 70	6. 312
	Comet - - - -	6. 0	17. 7	29. 6	16 17. 77	4 45. 533		
	Madrass, 651 - -	23. 9	35. 3	48. 1	20 35. 77	3 48. 860	4 18. 00	9. 707
	Comet - - - -	48. 4	0. 7	12. 7	22 0. 60	4 48. 678		
	Madrass, 651 - -	9. 0	20. 9	33. 0	26 20. 97	3 48. 624	— 4 20. 37	— 12. 980
15	1016, Σ. Cat. G. -	36. 0	47. 6	58. 3	12 2 47. 30	3 36. 282	+ 1 51. 13	+ 14. 010
	Comet - - - -	27. 9	38. 4	49. 0	4 38. 43	2 35. 130		
	1016, Σ. Cat. G. -	58. 0	9. 0	19. 9	11 8. 97	3 35. 675	1 49. 40	11. 471
	(✿ 9) - - - - -	23. 0	34. 1	- -	12 34. 02	1 43. 520		
	(✿ 9) - - - - -	38. 2	49. 0	59. 8	12 49. 00	1 40. 182		
	Comet - - - -	47. 6	58. 3	9. 2	12 58. 37	2 37. 062		
	1016, Σ. Cat. G. -	43. 2	54. 3	5. 0	19 54. 17	3 34. 951	1 48. 13	6. 734
	(✿ 9) - - - - -	8. 5	- -	- -	21 19. 47	1 42. 792		
	(✿ 9) - - - - -	23. 5	34. 3	44. 9	21 34. 33	1 39. 541		
	Comet - - - -	31. 5	41. 9	53. 5	21 42. 30	2 41. 075		
	1016, Σ. Cat. G. -	21. 4	32. 1	43. 0	24 32. 17	3 34. 552	1 47. 43	4. 680
	Comet - - - -	8. 7	19. 7	30. 4	26 19. 60	3 29. 872		
	1016, Σ. Cat. G. -	11. 8	22. 9	33. 8	28 22. 83	3 34. 318	1 46. 67	3. 326
	Comet - - - -	58. 8	9. 4	20. 3	30 9. 50	3 30. 992		
	1016, Σ. Cat. G. -	45. 0	55. 8	6. 7	31 55. 83	3 33. 930	1 46. 20	1. 880
	Comet - - - -	31. 0	42. 2	52. 9	33 42. 03	3 32. 050		
	1016, Σ. Cat. G. -	55. 0	5. 7	15. 6	35 5. 43	3 33. 981	1 46. 00	+ 0. 549
	Comet - - - -	40. 6	51. 4	2. 3	36 51. 43	3 33. 432		
	1016, Σ. Cat. G. -	58. 8	9. 9	20. 7	39 9. 80	3 33. 592	1 45. 13	— 1. 057
	Comet - - - -	43. 8	55. 4	5. 6	40 54. 93	3 34. 649		
	1016, Σ. Cat. G. -	10. 4	21. 4	32. 3	42 21. 37	3 33. 350	1 44. 36	2. 320
	Comet - - - -	55. 2	5. 7	16. 3	44 5. 73	3 35. 670		
	1016, Σ. Cat. G. -	59. 7	10. 4	21. 2	45 10. 43	3 33. 980	+ 1 43. 90	— 3. 518
	Comet - - - -	43. 6	54. 2	5. 2	46 54. 33	3 36. 498		

RESULTS.

Corr. Chron. + 2 m. 21. 20 s.

	α h. m. s.	δ ° ′ ″
651, Madrass,	9 6 24. 11	+25 35 3. 61

Comet—651, Madrass,

	h. m. s.	Δα m. s.	Δδ ′ ″
Sid. T.	12 12 34. 81	— 4 16. 51	— 1 34. 06
	Δρ	— . 00	— . 03
	p	+ 1. 04	+ 8. 30

Corr. Chron. + 2 m. 0. 74 s.

	α h. m. s.	δ ° ′ ″
Σ. Cat. G., 1016,	8 28 29. 53	+ 7 6 1. 22

Comet—Σ. Cat. G., 1016,

	h. m. s.	Δα m. s.	Δδ ′ ″
Sid. T.	12 31 50. 40	+ 1 46. 83	+ 0 54. 95
	Δρ	. 00	. 04
	p	+ . 88	11. 67

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COMET, 1861, I.

DATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT. A.	B.	C.	Mean.	MIC.		COMET—STAR. Δ α	Δ mic.
		s.	s.	s.	h. m. s.	w.	revs.	m. s.	revs.
1861. May 16	Comet	51.0	2.3	12.8	12 15 2.03	4	43.188		
	Weisse VIII, 851	21.0	32.1	42.8	21 31.97	2	30.050	— 6 29.94	— 39.031
	Comet	36.7	47.8	58.4	23 47.63	5	29.362		
	(✡ 9)	48.1	58.7	- -	27 58.78				
	(✡ 9)	3.8	14.4	25.2	28 14.46	4	33.180		
	Weisse VIII, 851	- -	18.9	29.8	30 18.88	2	29.355	6 31.25	42.965
	Comet	7.9	18.3	29.0	32 18.40	5	31.220		
	(✡ 9)	35.5	46.4	57.1	36 46.33	4	32.450		
	(✡ 10)	33.4	- -	54.9	38 44.15	1	34.380		
	Weisse VIII, 851	39.9	50.8	1.6	38 50.77	2	28.590	— 6 32.37	— 45.588
17	583, Santini	25.5	36.3	47.0	12 16 36.26	1	39.522	+ 4 26.77	— 22.011
	Comet	52.7	2.9	13.5	21 3.03	2	44.530		
	583, Santini	31.7	42.7	53.4	22 42.60	1	38.908	4 25.40	23.658
	Comet	57.0	8.0	18.9	27 8.00	3	33.111		
	583, Santini	25.1	35.7	46.7	28 35.83	1	38.380	4 25.00	26.472
	Comet	50.1	0.8	11.6	33 0.83	3	34.991		
	583, Santini	50.9	1.8	12.8	34 1.83	1	37.810	+ 4 24.07	— 28.411
	Comet	14.9	26.0	36.8	38 25.90	3	36.360		
18	Comet	27.5	38.0	48.5	8 40 38.00	1	36.755		
	588, Santini	0.5	11.0	21.5	43 11.00	4	37.337	— 2 33.00	+ 43.477
	Harvard Zones, 47. 23	- -	27.5	38.2	47 27.60	4	37.192		
	Comet	16.5	27.0	38.0	49 27.17	1	37.965		
	588, Santini	51.0	1.5	12.0	52 1.50	4	36.902	2 34.33	41.832
	Comet	36.5	46.5	57.5	53 46.83	1	38.770		
	588, Santini	10.7	21.5	32.0	56 21.40	4	36.385	2 34.57	40.510
	Comet	26.5	37.0	47.5	8 57 37.00	1	39.441		
	588, Santini	1.7	12.3	23.0	9 0 12.33	4	36.032	2 35.33	39.486
	Comet	26.3	36.0	47.0	1 36.43	1	40.162		
	588, Santini	1.0	11.5	22.0	4 11.50	4	35.340	— 2 35.07	+ 38.073
22	Comet	40.4	51.5	1.7	12 38 51.20	4	40.299		
	16162, Lalande	57.9	8.9	19.5	39 8.77	1	46.940	— 0 17.57	— 36.254
	Comet	33.9	44.9	55.6	40 44.80	4	40.095		
	16162, Lalande	51.6	2.3	13.3	41 2.40	1	46.632	0 17.60	36.358
	Comet	11.6	22.5	33.2	44 22.43	4	40.182		
	16162, Lalande	29.2	40.2	50.0	44 39.80	1	45.998	0 17.37	37.079
	Comet	58.1	8.9	19.9	46 8.97	4	40.588		
	16162, Lalande	15.9	27.0	37.8	46 26.90	1	45.360	0 17.93	38.123
	Comet	53.1	3.5	14.2	48 3.60	4	40.489		
	16162, Lalande	10.5	- -	32.0	48 21.25	1	44.818	0 17.65	38.566
	Comet	44.1	53.1	5.4	49 54.87	4	39.951		
	16162, Lalande	2.5	13.0	23.9	50 13.13	1	44.390	0 18.26	38.456
	Comet	27.9	38.8	49.5	51 38.73	4	39.910		
	16162, Lalande	46.3	57.1	8.2	51 57.20	1	43.970	0 18.47	38.835
	Comet	18.8	29.4	40.4	53 29.53	4	40.191		
	16162, Lalande	37.2	48.0	58.8	53 48.00	1	43.369	0 18.47	39.717
	Comet	38.5	49.4	0.5	12 55 49.46	4	40.361		
	16162, Lalande	57.5	8.8	19.3	56 8.53	1	42.840	— 0 19.07	— 40.416

RESULTS.

m. s.
Corr. Chron. + 1 57.19

	α	δ
	h. m. s.	° ′ ″
Weisse VIII, 851,	8 32 56.79	+ 4 53 2.68

Comet—Weisse VIII, 851,

		Δα	Δδ
	h. m. s.	m. s.	′ ″
Sid. T.	12 25 39.97	— 6 31.19	—10 53.64
	Δρ	— .02	— .48
	p	+ .88	+ 11.67

m. s.
Corr. Chron + 1 54.70

	α	δ
	h. m. s.	° ′ ″
583, Santini,	8 18 24.07	+ 2 33 1.04

Comet—583, Santini,

		Δα	Δδ
	h. m. s.	m. s.	′ ″
Sid. T.	12 31 49.14	+ 4 25.31	— 6 26.37
	Δρ	— .02	— .38
	p	+ .85	+ 11.38

m. s.
Corr. Chron. + 3 51.58

	α	δ
	h. m. s.	° ′ ″
588, Santini,	8 22 2.68	+ 0 9 24.60

Comet—588, Santini,

		Δα	Δδ
	h. m. s.	m. s.	′ ″
M. T.	8 56 28.67	— 2 34.46	+10 25.17
	Δt	— .42	
	Δρ	+ .04	.92
	p	+ .82	11.13

m. s.
Corr. Chron. + 1 32.77

	α	δ
	h. m. s.	° ′ ″
16162, Lalande,	8 8 19.82	— 6 29 20.23

Comet—16162, Lalande,

		Δα	Δδ
	h. m. s.	m. s.	′ ″
Sid. T.	12 52 39.58	— 0 18.32	— 9 59.14
	Δρ	+ .15	— 2.10
	p	+ .76	+ 10.14

(Continued.)

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COMET 1861, I.

DATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT. A.	B.	C.	Mean.	MIC.	COMET—STAR. Δ α	Δ mic.
1861.		s.	s	s.	h. m. s.	w. revs.	m. s.	revs.
May 22	Comet - - - -	23. 0	33. 8	44. 4	12 57 33. 73	4 40. 338		
	16162, Lalande - -	41. 8	52. 4	3. 4	57 52. 53	1 42. 271	— 0 18. 80	— 40. 962
	Comet - - - -	16. 9	27. 2	38. 5	13 2 27. 53	4 39. 300		
	16162, Lalande - -	36. 0	47. 1	57. 9	2 47. 00	1 40. 695	0 19. 47	41. 500
	Comet - - - -	5. 8	17. 2	27. 7	4 16. 90	4 38. 790		
	16162, Lalande - -	25. 1	36. 3	46. 7	4 36. 03	1 40. 151	— 0 19. 13	— 41. 534
23	16069, Lalande - -	17. 4	28. 4	39. 1	12 34 28. 30	3 34. 545	+ 0 5. 70	+ 5. 840
	Comet - - - -	23. 3	34. 0	44. 7	34 34. 00	3 28. 705		
	16069, Lalande - -	44. 5	55. 1	6. 0	36 55. 20	3 34. 035	0 5. 60	5. 961
	Comet - - - -	49. 8	0. 9	11. 7	37 0. 80	2 40. 932		
	16069, Lalande - -	45. 1	55. 9	5. 8	38 55. 60	3 33. 885	0 5. 77	5. 433
	Comet - - - -	50. 3	1. 7	12. 1	39 1. 37	2 41. 310		
	16069, Lalande - -	21. 3	32. 0	42. 9	40 32. 07	3 33. 123	0 5. 20	5. 042
	Comet - - - -	26. 5	37. 3	48. 0	40 37. 27	2 40. 939		
	16069, Lalande - -	51. 2	2. 0	13. 0	42 2 07	2 45. 761	0 5. 06	4. 669
	Comet - - - -	56. 5	6. 9	18. 0	42 7. 13	2 41. 092		
	16069, Lalande - -	33. 9	44. 7	55. 3	44 44. 63	2 44. 840	0 4. 70	3. 959
	Comet - - - -	38. 4	49. 4	0. 2	44 49. 33	2 40. 881		
	16069, Lalande - -	6. 4	17. 3	28. 2	46 17. 30	2 44. 539	0 4. 37	3. 683
	Comet - - - -	10. 9	21. 7	32. 4	46 21. 67	2 40. 856		
	16069, Lalande - -	36. 1	47. 0	57. 9	47 47. 00	2 44. 122	0 4. 33	3. 381
	Comet - - - -	40. 4	51. 4	2. 2	47 51. 33	2 40. 741		
	16069, Lalande - -	17. 0	27. 8	38. 6	51 27. 80	2 43. 790	0 4. 07	3. 099
	Comet - - - -	21. 2	32. 0	42. 4	51 31. 87	2 40. 691		
	16069, Lalande - -	0. 4	11. 5	22. 1	53 11. 33	2 43. 356	+ 0 3. 84	+ 2. 767
	Comet - - - -	4. 2	15. 2	26. 1	53 15. 17	2 40. 589		
	(✡ 9) - - - - -	25. 2	- -	46. 5	55 35. 85	3 41. 010		
	(✡ 10) - - - - -	- -	- -	24. 5	56 13. 85	2 36. 820		
	(✡ 9) - - - - -	- -	41. 2	51. 7	57 41. 20	2 43. 181		
24	(✡ 9) - - - - -	29. 0	39. 7	50. 1	12 29 39. 60	5 36. 630		
	Comet - - - -	42. 2	53. 0	3. 2	29 52. 80	2 43. 275		
	(✡ 9) - - - - -	19. 2	30. 1	40. 9	34 30. 07	5 35. 048		
	Comet - - - -	32. 3	43. 3	53. 3	34 42. 97	2 42. 870		
	Weisse VIII, 162 -	36. 9	48. 2	59. 0	38 48. 03	5 38. 570	— 4 5. 06	+ 38. 658
	(✡ 9) - - - - -	26. 6	37. 9	48. 6	41 37. 70	5 32. 425		
	Comet - - - -	39. 4	49. 9	59. 9	41 49. 73	2 42. 529		
25	Comet - - - -	- -	52. 5	- -	8 35 52. 5	2 35. 412		
	Weisse VIII, 19 -	Cl'ds	- -	29. 5	37 18. 4	5 38. 180	— 1 25. 09	+ 45. 726

RESULTS.

m. s.
Corr. Chron. + 1 29. 37

	α h. m. s.	δ ° ′ ″
11069, Lalande,	8 5 29. 93	— 8 7 26. 63

Comet—16069, Lalande,

		△α m. s.	△δ ′ ″
Sid. T.	12 50 58. 48	+ 0 4. 80	+ 1 7. 36
	Δρ —	. 02	. 28
	p +	. 79	+ 9. 78

m. s.
Corr. Chron. + 1 25. 82

	α h. m. s.	δ ° ′ ″
Weisse VIII, 162,	8 7 20. 02	— 9 37 4. 19

Comet—Weisse VIII, 162,

		△α m. s.	△δ ′ ″
Sid. T.	12 36 8. 79	— 4 5. 06	+ 9 54. 16
	Δρ +	. 18	2. 31
	p +	. 71	+ 9. 56

m. s
Corr. Chron. 3 33. 05

	α h. m. s.	δ ° ′ ″
Weisse VIII, 19,	8 2. 22. 71	—10 56 20. 48

Comet—Weisse VIII, 19,

		△α m. s.	△δ ′ ″
M. T.	8 39 25. 5	— 1 25. 90	+11 42. 80
	Δt —	. 23	
	Δρ +	. 46	5. 99
	p +	. 71	+ 9. 05

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LETO.

DATE.	OBJECTS	OBSERVED TIMES OF TRANSIT. A.	B.	C.	Mean.	MIC.	PLANET—STAR. Δ α	Δ mic.
1861.		s.	s.	s.	h. m. s.	w. revs.	m. s.	revs.
June 13	Leto	30.7	41.9	- -	15 4 41.73	4 47.595		
	(✡ 12)	37.1	48.1	58.9	4 48.03	5 43.949		
	(✡ 9.5)	41.0	52.3	3.2	4 52.17	2 46.150		
	Weisse XIII, 725	46.6	57.1	8.0	4 57.23	3 41.281	— 0 15.50	— 19.348
	Leto	22.0	34.0	44.6	9 33.53	4 47.395		
	(✡ 12)	28.0	40.7	51.0	9 39.90	5 43.600		
	(✡ 9.5)	33.2	44.0	- -	9 44.13	2 46.322		
	Weisse XIII, 725	38.9	49.2	- -	9 49.58	3 41.360	0 16.05	19.069
	Leto	6.4	- -	27.6	14 17.00	4 47.690		
	(✡ 12)	13.1	- -	- -	14 23.70	5 44.175		
	(✡ 9.5)	17.8	- -	38.9	14 28.35	2 46.230		
	Weisse XIII, 725	21.9	- -	44.2	14 33.05	3 41.292	— 0 16.05	— 19.432
14	Leto	4.1	15.0	25.7	14 26 14.93	3 36.182		
	Weisse XIII, 725	28.7	39.3	50.2	26 39.40	1 41.780	— 0 24.47	— 24.263
	Leto	32.4	43.3	53.7	31 43.13	3 36.145		
	Weisse XIII, 725	56.8	7.6	18.4	32 7.60	1 41.710	0 24.47	24.296
	Leto	53.0	3.8	14.4	35 3.73	3 36.080		
	Weisse XIII, 725	17.3	28.4	39.2	35 28.30	1 41.819	0 24.57	24.122
	Leto	0.8	11.7	22.1	38 11.53	3 36.150		
	Weisse XIII, 725	25.4	36.4	45.9	38 35.90	1 41.795	— 0 24.37	— 24.216
18	Leto	41.0	52.0	2.7	14 37 51.90	4 46.718		
	Weisse XIII, 725	25.4	37.1	47.9	38 36.80	1 40.395	— 0 44.90	— 49.218
	Leto	48.9	59.7	10.5	44 59.70	4 46.571		
	Weisse XIII, 725	34.6	45.5	56.5	45 45.53	1 40.710	0 45.83	48.756
	Leto	39.9	41.3	52.0	52 41.07	4 46.201		
	Weisse XIII, 725	15.7	26.8	37.5	53 26.67	1 40.100	— 0 45.67	— 48.996

RESULTS.

m. s.
Corr. Chron. — 0 53.40

	α	δ
	h. m. s.	° ′ ″
Weisse XIII, 725,	13 42 29.84	—10 19 15.54

Leto—Weisse XIII, 725,

		△α	△δ
	h. m. s.	m. s.	′ ″
Sid. T.	15 8 37.35	— 0 15.87	— 4 56.37
	Δρ	.00	— .21
	p +	.07	+ 2.81

m. s.
Corr. Chron. — 0 56.56

	α	δ
	h. m. s.	° ′ ″
Weisse XIII, 725,	13 42 29.83	—10 19 15.25

Leto—Weisse XIII, 725,

		△α	△δ
	h. m. s.	m. s.	′ ″
Sid. T.	14 31 51.77	— 0 24.47	— 6 13.47
	Δρ		— .25
	p +	.03	+ 2.82

m. s.
Corr. Chron. — 1 13.51

	α	δ
	h. m. s.	° ′ ″
Weisse XIII, 725,	13 42 29.77	—10 19 15.11

Leto—Weisse XIII, 725,

		△α	△δ
	h. m. s.	m. s.	′ ″
Sid. T.	14 43 57.38	— 0 45.47	—12 32.95
	Δρ —	.01	— .51
	p +	.05	+ 2.78

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EGERIA.

DATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT. A.	B.	C.	Mean.	MIC.	PLANET—STAR. Δ α	Δ mic.
1861.		s.	s	s.	h. m. s.	w. revs	m. s.	revs.
June 14	6818, Lacaille - -	44. 3	57. 6	10. 3	15 54 57. 40	1 35. 552	+ 0 41. 57	— 53. 348
	(☿ 10 5) - - - -	19. 4	32. 5	45. 9	55 32. 60	4 39. 735		
	Egeria - - - -	25. 8	39. 2	51. 9	55 38. 97	4 46. 005		
	6818, Lacaille - -	9. 1	21. 9	34. 9	58 21. 97	1 35. 461	0 41. 43	53. 474
	(☿ 10.5) - - - -	44. 0	57. 0	10. 3	58 57. 10	4 39. 709		
	Egeria - - - -	50. 4	3. 5	16. 3	59 3. 40	4 46. 040		
	6818, Lacaille - -	36. 6	49. 8	1. 8	16 1 49. 40	1 35. 800	+ 0 41. 17	— 53. 165
	(☿ 10.5) - - - -	11. 3	24. 7	37. 4	2 24. 47	4 39. 885		
	Egeria - - - -	17. 6	30. 5	43. 6	2 30. 57	4 46. 070		
18	6781, Lacaille - -	30. 8	44. 1	57. 3	15 46 44. 07	3 43. 192	+ 1 47. 40	+ 8. 712
	Egeria - - - -	18. 3	31. 5	44. 6	48 31. 47	2 47. 338		
	6781, Lacaille - -	8. 5	21. 9	35. 0	50 21. 80	3 43. 292	1 47. 23	8. 860
	Egeria - - - -	55. 6	9. 4	22. 1	52 9. 03	2 47. 290		
	6781, Lacaille - -	26. 9	40. 1	53. 2	54 40. 07	3 43. 445	1 47. 20	8. 883
	Egeria - - - -	14. 0	27. 3	40. 5	56 27. 27	2 47. 420		
	6781, Lacaille - -	42. 1	55. 8	8. 9	57 55. 60	3 43. 570	1 46. 80	9. 040
	Egeria - - - -	29. 2	42. 3	55. 7	59 42. 40	2 47. 388		
	6781, Lacaille - -	39. 4	52. 3	5. 6	16 0 52. 43	3 43. 738	1 47. 07	9. 018
	Egeria - - - -	26. 1	39. 7	52. 7	2 39. 50	2 47. 578		
	6781, Lacaille - -	58. 0	11. 3	24. 2	5 11. 17	3 44. 010	1 46. 46	9. 007
	Egeria - - - -	44. 4	57. 6	10. 9	6 57. 63	2 47. 861		
	6781, Lacaille - -	12. 5	25. 8	38. 9	8 25. 73	3 43. 981	+ 1 46. 17	+ 8. 990
	Egeria - - - -	59. 0	11. 9	25. 1	10 11. 90	2 47. 849		

RESULTS.

June 14

Corr. Chron. — 0 m. 56. s. 77

	α h. m. s.	δ ° ′ ″
6818, Lacaille,	16 15 30. 68	—34 51 3. 57

Egeria—6818, Lacaille,

		△α m. s.	△δ ′ ″
Sid. T.	15 58 7. 54	+ 0 41. 39	—13 39. 63
	Δρ	. 00	— 2. 86
	p —	. 02	+ 4. 69

18

Corr. Chron. — 1 m. 13. s. 76

	α h. m. s.	δ ° ′ ″
6781, Lacaille,	16 10 16. 92	—35 9 0. 80

Egeria—6781, Lacaille,

		△α m. s.	△δ m. s.
Sid. T.	15 58 17. 55	+ 1 46. 90	+ 2 17. 25
	Δρ	. 00	. 49
	p —	. 01	+ 4. 64

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COMET 1861, II.

DATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT. A.	B.	C.	Mean.	MIC.	COMET—STAR. Δα	Δ mic.
1861.		s.	s.	s.	h. m. s.	w. revs.	m. s.	revs.
July 2	Comet - - - -	39.7	4.5	29.5	9 15 4.57	3 32.112		
	A. Z, 187, 74 - -	58.0	22.2	45.6	16 21.93	2 39.602	— 1 17.36	— 5.368
	(☉ 11) - - - -	- -	- -	59.5				
	Comet - - - -	21.5	47.0	10.5	33 46.33	1 47.609		
	A. Z., 187, 74 - -	45.0	- -	31.0	34 8.00	2 38.046	— 0 21.67	+ 7.440
	A Z., 187, 74 - -	21.5	45.5	9.0	43 45.33	4 31.508	+ 0 8.00	15.763
	Comet - - - -	28.5	53.0	18.5	43 53.33	3 28.779		
	A. Z, 187, 74 - -	8.0	31.0	55.0	46 31.33	3 44.311	0 16.24	17.672
	Comet - - - -	22.7	48.0	12.0	46 47.57	2 39.497		
	A. Z., 187, 74 - -	39.7	- -	27.5	49 3.60	3 44.029	0 23.90	19.778
	Comet - - - -	3.0	- -	52.0	49 27.50	2 37.109		
	A. Z., 187, 74 - -	22.5	46.5	9.5	57 46.17	3 43.351	0 51.00	26.449
	Comet - - - -	12.0	37.5	2.0	58 37.17	1 46.763		
	A. Z., 187, 74 - -	24.5	49.0	- -	10 1 49.17	3 43.270	1 3.00	29.789
	Comet - - - -	27.5	52.0	17.0	2 52.17	1 43.342		
	A. Z, 187, 74 - -	22.0	45.5	9.0	4 45.50	3 42.855	1 12.25	32.065
	Comet - - - -	33.0	- -	22.5	5 57.75	1 40.651		
	A. Z, 187, 74 - -	10.5	34.5	- -	8 34.83	3 42.545	1 24.00	34.865
	Comet - - - -	34.5	58.5	23.5	9 58.83	1 37.541		
	A. Z., 187, 74 - -	11.5	35.0	58.0	11 34.83	3 42.318	1 38.10	37.549
	Comet - - - -	49.0	13.7	- -	13 12.93	1 34.630		
	A. Z., 187, 74 - -	51.0	13.5	37.0	16 13.83	4 28.758	+ 1 48.40	+ 40.453
	Comet - - - -	37.5	2.5	26.7	18 2.23	1 31.200		
3	2396, Radcliffe - -	12.3	39.0	5.9	15 14 39.07	1 44.072	+11 40.10	— 20.210
	Comet - - - -	25.0	19.5	47.3	26 19.17	2 47.279		
	2396, Radcliffe - -	57.9	24.7	51.3	35 24.63	1 43.080	12 44.54	— 13.965
	A. Z., 176, 26 - -	12.0	39.6	5.1	44 38.90	5 38.830	3 30.27	+ 41.746
	Comet - - - -	40.9	9.2	37.4	48 9.17	2 40.042		
	A. Z., 176, 26 - -	0.9	27.9	54.2	50 27.67	5 38.542	3 48.83	43.631
	Comet - - - -	48.1	16.7	44.7	54 16.50	2 37.869		
	A. Z., 176, 26 - -	39.5	6.0	31.7	56 5.73	5 38.390	4 6.34	45.276
	Comet - - - -	44.1	12.0	40.1	16 0 12.07	2 36.072		
	A. Z., 176, 26 - -	39.2	6.1	31.9	2 5.73	5 37.992	4 25.07	46.870
	Comet - - - -	2.7	30.9	58.8	6 30.80	2 34.080		
	A. Z, 176, 26 - -	52.3	19.0	44.8	9 18.70	5 37.405	+ 4 47.77	+ 48.958
	Comet - - - -	38.0	6.5	34.9	14 6.47	2 31.405		
4	A. Z, 176, 113 - -	36.7	4.2	30.9	15 19 3.93	5 48.940	+ 0 11.90	+ 66.731
	Comet - - - -	47.1	15.9	44.5	19 15.83	1 42.170		
	A. Z., 176, 113 - -	38.7	6.4	33.1	22 6.07	5 48.870	0 19.73	66.523
	Comet - - - -	57.3	25.7	54.4	22 25.80	1 42.308		
	A. Z., 176, 113 - -	11.8	- -	6.6	27 39.20	5 48.685	0 34.37	66.326
	Comet - - - -	45.2	13.8	41.7	28 13.57	1 42.320		
	A. Z, 176, 112 - -	- -	12.1	- -	31 12.1			
	A. Z., 176, 113 - -	34.8	2.9	29.7	32 2.47	5 48.321	0 45.23	66.171
	Comet - - - -	18.9	47.9	16.3	32 47.70	1 42.111		
	A. Z., 176, 112 - -	- -	44.3	- -	35 44.3			
	A. Z, 176, 113 - -	5.5	33.0	- -	36 33.0	5 48.098	+ 0 56.90	+ 65.834
	Comet - - - -	2.3	30.0	- -	37 29.9	1 42.225		

RESULTS.

m. s.
Corr. Chron. + 0 58.83

	α h. m. s.	δ ° ′ ″
A. Z., 187, 74,	8 42 28.14	+63 6 15.11

Comet—A. Z, 187, 74,

	h. m. s.	Δα m. s.	Δδ ′ ″
M. T.	9 55 18.86	+ 0 38.71	+ 5 58.32
	Δt	.11	
	Δρ	.03	.12
	p +	6.83	+ 15.35

m. s.
Corr. Chron. — 2 5.96

	α h. m. s.	δ ° ′ ″
2396, Radcliffe,	9 39 28.85	+66 14 14.63
A. Z. N., 176, 26,	9 48 43.49	+65 59 55.98

Comet—2396, Radcliffe,

	h. m. s.	Δα m. s.	Δδ ′ ″
Sid. T.	15 35 8.27	+12 12.32	— 4 22.62
	Δρ —	.02	— .08
	p +	6.45	+ 11.08

Comet—A. Z., 176, 26,

	h. m. s.		
Sid. T.	15 58 33.16	+ 4 7.66	+11 36.16
	Δρ	.07	.22
	p +	6.42	+ 13.92

(Continued.)

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COMET 1861, II.

DATE.	OBJECTS	OBSERVED TIMES OF TRANSIT. A.	B.	C.	Mean.	MIC.	COMET—STAR. Δ α	Δ mic.
1861.		s.	s.	s.	h. m. s.	w. revs.	m. s.	revs.
July 4	A. Z., 176, 113	33.1	0.8	27.6	15 43 0.50	5 47.920	+ 1 14.60	+ 65.741
	Comet	- -	14.7	42.9	44 15.10	1 42.141		
	A. Z., 176, 113	11.0	38.1	5.7	46 38.27	5 47.900	1 23.78	65.890
	Comet	33.2	- -	30.9	48 2.05	1 41.971		
	A. Z., 176, 113	29.3	56.8	- -	49 57.50	5 47.609	1 31.43	65.570
	Comet	0.0	28.9	57.9	51 28.93	1 42.000		
	A. Z., 176, 113	40.4	7.9	- -	54 8.35	5 47.530	1 42.95	65.601
	Comet	22.9	51.3	19.7	55 51.30	1 41.890		
	A. Z. N., 176, 115	- -	- -	2.8	55 35.20	5 54.089		
	A. Z., 176, 113	11.8	39.7	6.8	58 39.43	5 47.122	1 54.97	65.263
	Comet	5.8	34.5	2.9	16 0 34.40	1 41.820		
	A. Z., 176, 113	- -	22.3	- -	3 22.30	5 47.020	2 7.00	65.332
	Comet	0.6	29.5	57.8	5 29.30	1 41.649		
	A. Z., 176, 113	43.2	10.5	37.5	20 10.40	5 46.238	+ 2 51.13	+ 64.440
	Comet	32.9	1.3	30.4	23 1.53	1 41.759		
6	A. Z., 186, 96	33.5	58.4	24.0	15 31 58.63	1 26.650	+ 4 51.67	+ 83.086
	Comet	24.8	50.2	15.9	36 50.30	5 49.775		
	A. Z., 186, 100	58.5	23.6	49.1	36 23.73	5 40.331		
	(✲ 10.5)	9.2	34.6	0.2	36 34.67	5 52.280		
	A. Z., 186, 96	0.8	25.9	51.3	47 26.00	1 26.812	5 13.73	79.194
	Comet	13.6	39.6	6.0	52 39.73	5 46.045		
	A. Z., 186, 100	25.9	51.0	16.8	52 51.23	5 40.575		
	(✲ 10.5)	37.2	2.2	27.9	53 2.43	5 52.328		
	A. Z., 186, 96	5.8	30.0	56.6	16 10 30.60	1 27.092	5 45.57	73.077
	A. Z., 186, 100	30.0	- -	20.8	15 55.44	Same as Comet.		
	(✲ 10.5)	41.4	5.9	31.9	16 6.40	5 52.555		
	Comet	49.9	15.9	42.7	16 16.17	5 40.208		
	A. Z., 186, 96	4.2	29.0	54.2	21 29.13	1 27.195	+ 6 1.74	+ 70.548
	Comet	5.2	30.4	57.0	27 30.87	5 37.782		
8	Comet	39.9	3.2	26.4	15 38 3.17	2 28.680		
	A. Z., 203, 66	- -	30.0	53.4	39 30.07	3 35.605	— 1 26.90	— 19.783
	(✲ 8)	1.2	24.2	47.2	42 24.20	3 41.270		
	Comet	4.9	28.3	51.3	44 28.17	1 44.060		
	A. Z., 203, 66	26.7	50.0	12.9	45 49.87	2 48.339	1 21.70	21.282
	(✲ 8)	20.9	44.0	6.6	48 43.83	3 41.369		
	Comet	1.6	24.7	47.9	50 24.73	1 42.625		
	A. Z., 203, 66	- -	42.4	5.4	51 42.33	3 35.659	1 17.60	22.895
	(✲ 8)	13.3	36.2	59.0	54 36.17	3 41.682		
	Comet	13.2	36.0	59.5	56 36.23	1 41.198		
	A. Z., 203, 66	- -	49.0	12.2	57 49.08	3 35.636	1 12.85	24.299
	(✲ 8)	20.2	42.9	5.9	16 0 43.00	3 41.381		
	Comet	0.9	24.2	47.2	2 24.10	1 39.860		
	A. Z., 203, 66	- -	32.7	55.6	3 32.55	3 35.960	1 8.45	25.961
	(✲ 8)	3.0	26.1	48.9	6 26.00	3 41.361		
	Comet	2.3	25.4	48.6	8 25.43	1 38.341		
	A. Z., 203, 66	- -	29.6	52.3	9 29.38	3 35.815	1 3.95	27.335
	(✲ 8)	0.4	23.2	46.2	12 23.27	3 41.175		
	Comet	49.4	- -	35.8	14 12.60	1 37.139		
	A. Z., 203, 66	- -	12.2	35.6	15 12.43	3 35.730	— 0 59.83	— 28.452
	(✲ 8)	43.6	6.6	29.4	18 6.43	3 41.515		

RESULTS.

Corr. Chron. — 2 9.99 (m. s.)

	α (h. m. s.)	δ (° ′ ″)
A. Z., 176, 113,	10 57 18.38	+66 37 38.41

Comet—A. Z., 176, 113,

		Δα (m. s.)	Δδ (′ ″)
Sid. T.	15 43 34.64	+ 1 17.83	+16 51.09
	Δρ	.12	.28
	p	+ 5.54	+ .74

Corr. Chron. — 2 17.60 (m. s.)

	α (h. m. s.)	δ (° ′ ″)
A. Z., 186, 96,	12 25 44.31	+64 31 31.98

Comet—A. Z., 186, 96,

		Δα (m. s.)	Δδ (′ ″)
Sid. T.	16 1 1.67	+ 5 28.18	+19 35.41
	Δρ	.10	+ .31
	p	+ 3.46	— 4.82

Corr. Chron. — 2 25.50 (m. s.)

	α (h. m. s.)	δ (° ′ ″)
A. Z., 203, 66,	13 21 56.26	+61 56 44.55

Comet—A. Z., 203, 66,

		Δα (m. s.)	Δδ (′ ″)
Sid. T.	15 59 47.47	— 1 8.73	— 6 34.63
	Δρ	— .02	.12
	p	+ 2.07	— 6.97

(Continued.)

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COMET 1861, II.

DATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT A.	B.	C.	Mean.	MIC.	COMET—STAR. Δ α	Δ mic.
1861.		s.	s.	s.	h. m. s.	w. revs.	m. s.	revs.
July 8	Comet - - - -	26. 9	49. 8	12. 9	16 19 49. 87	1 35. 890		
	A. Z., 203, 66 - -	- -	45. 3	8. 3	20 45. 42	3 35. 861	— 0 55. 55	— 29. 832
	(*) - - - - -	20. 7	- -	- -	22 43. 67	3 38. 820		
	(*) - - - - -	23. 2	- -	- -	22 46. 17			
	(* 8) - - - - -	16. 3	39. 2	2. 2	23 39. 23	3 41. 402		
	Comet - - - -	9. 6	32. 5	55. 2	25 32. 43	1 34. 592		
	A. Z., 203, 66 - -	- -	- -	46. 9	26 24. 13	3 35. 980	0 51. 70	31. 249
	(* 8) - - - - -	55. 2	17. 7	41. 0	29 17. 97	3 41. 485		
	Comet - - - -	25. 0	47. 3	10. 6	31 47. 63	1 34. 590		
	(* 8) - - - - -	4. 8	27. 8	51. 0	35 27. 87	3 41. 588	— 3 40. 24	— 36. 859
12	Comet - - - -	42. 0	2. 0	21. 5	17 29 1. 83	3 45. 650		
	A. Z., 109, 92 - -	24. 8	44. 3	4. 0	30 44. 03	3 44. 399	— 1 42. 20	+ 1. 251
	Comet - - - -	9. 3	28. 9	48. 6	32 28. 93	3 45. 010		
	A. Z., 109, 92 - -	50. 8	10. 6	30. 5	34 10. 63	3 44. 111	1 41. 70	0. 899
	Comet - - - -	47. 0	7. 0	27. 0	36 7. 00	3 44. 392		
	A. Z., 109, 92 - -	27. 9	47. 8	7. 9	37 47. 87	3 44. 140	1 40. 87	+ 0. 252
	Comet - - - -	57. 8	17. 5	37. 8	38 17. 70	3 44. 083		
	A. Z., 109, 92 - -	37. 8	57. 2	17. 0	40 57. 33	3 44. 139	1 39. 63	— 0. 056
	Comet - - - -	53. 5	13. 7	33. 8	42 13. 67	3 43. 682		
	A. Z., 109, 92 - -	32. 8	52. 2	12. 5	43 52. 50	3 44. 185	— 1 38. 83	— 0. 503
14	3188, Radcliffe - -	43. 6	2. 4	21. 7	17 39 2. 57	5 49. 913	+ 5 21. 13	— 59. 851
	A. Z., 5, 9 - - -	21. 2	39. 8	58. 9	40 39. 97	3 35. 301		
	Comet - - - -	4. 9	23. 2	43. 0	44 23. 70	2 33. 020		
	3188, Radcliffe - -	45. 8	4. 5	24. 2	46 4. 83	5 50. 043	5 22. 34	60. 912
	Comet - - - -	8. 3	27. 2	46. 0	51 27. 17	1 49. 092		
	3188, Radcliffe - -	44. 2	3. 8	23. 2	53 3. 73	5 50. 171	5 24. 17	61. 984
	Comet - - - -	8. 9	27. 9	46. 9	58 27. 90	1 48. 148		
	3188, Radcliffe - -	54. 2	13. 8	32. 9	18 0 13. 67	5 50. 210	5 25. 50	62. 729
	Comet - - - -	20. 2	38. 9	58. 4	5 39. 17	1 47. 442		
	3188, Radcliffe - -	56. 4	14. 7	34. 0	7 15. 03	5 50. 308	+ 5 26. 87	— 63. 634
	Comet - - - -	22. 8	41. 9	1. 0	12 41. 90	1 46. 635		
16	Comet - - - -	1. 3	19. 3	38. 2	16 38 19. 60	5 51. 732		
	3227, Radcliffe - -	- -	57. 9	15. 4	38 57. 50	1 25. 815	— 0 37. 90	+ 85. 878
	Comet - - - -	26. 9	44. 9	3. 1	41 44. 97	5 51. 411		
	3227, Radcliffe - -	- -	22. 9	41. 4	42 23. 12	1 25. 762	0 38. 15	85. 620
	Comet - - - -	31. 8	- -	9. 4	44 50. 60	5 50. 950		
	3227, Radcliffe - -	- -	27. 4	46. 0	45 27. 20	1 25. 795	0 36. 60	85. 116
	Comet - - - -	57. 7	16. 2	34. 4	48 16. 10	5 50. 630		
	3227, Radcliffe - -	- -	52. 8	10. 7	48 52. 55	1 25. 688	0 36. 45	84. 903
	Comet - - - -	43. 4	1. 9	20. 2	52 1. 83	5 50. 241		
	3227, Radcliffe - -	- -	38. 3	56. 4	52 38. 13	1 25. 775	0 36. 30	84. 427
	Comet - - - -	8. 2	26. 2	44. 8	55 26. 40	5 49. 951		
	3227, Radcliffe - -	- -	2. 3	20. 9	56 2. 50	1 25. 722	0 36. 10	84. 190
	Comet - - - -	21. 0	- -	57. 9	58 39. 45	5 49. 492		
	3227, Radcliffe - -	- -	15. 2	33. 2	59 14. 75	1 25. 608	0 35. 30	83. 845
	Comet - - - -	22. 4	40. 8	59. 0	17 2 40. 73	5 49. 221		
	3227, Radcliffe - -	- -	15. 6	33. 2	3 15. 23	1 25. 551	— 0 34. 50	+ 83. 631

RESULTS.

Corr. Chron. — 2 38. 62 m. s.

	α h. m. s.	δ ° ′ ″
A. Z., 109, 92,	14 9 15. 87	+56 58 6. 78

Comet—A. Z., 109, 92,

	Δα m. s.	Δδ ′ ″
Sid. T. 17 32 59. 21	— 1 40. 65	+ 0 5. 67
Δρ	. 00	. 00
p	+ 1. 55	— 1. 58

Corr. Chron. — 2 45. 67 m. s.

	α h. m. s.	δ ° ′ ″
3188, Radcliffe,	14 14 21. 48	+55 30 13. 98

Comet—3188, Radcliffe,

	Δα m. s.	Δδ ′ ″
Sid. T. 17 55 43. 30	+ 5 24. 00	—15 50. 12
Δρ	— . 04	. 26
p	+ 1. 38	— 0. 33

Corr. Chron. — 2 52. 71 m. s.

	α h. m. s.	δ ° ′ ″
3227, Radcliffe,	14 28 59. 64	+53 30 37. 43

Comet—3227, Radcliffe,

	Δα m. s.	Δδ ′ ″
Sid. T. 16 50 32. 70	— 0 36. 07	+21 37. 17
Δρ	+ . 03	+ . 15
p	+ . 86	— 2. 46

(Continued.)

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COMET, 1861, II.

DATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT. A.	B.	C.	Mean.	MIC.	COMET—STAR. Δ α	Δ mic.
1861.		s.	s.	s.	h. m. s.	w. revs.	m. s.	revs.
July 16	Comet	37.2	55.3	14.1	17 4 55.53	5 48.888		
	3227, Radcliffe	- -	29.5	47.8	5 29.48	1 25.618	— 0 33.95	+ 83.231
	Comet	0.9	18.8	37.0	7 18.90	5 48.810		
	3227, Radcliffe	- -	54.3	12.3	7 54.35	1 25.618	— 0 35.45	+ 83.153
17	Comet	11.0	29.8	48.2	16 8 29.67	5 43.098		
	(✡ 105) W.	- -	0.9	20.0	13 1.12	1 44.070	— 4 31.45	+ 58.989
	Comet	31.9	50.3	8.4	14 50.20	5 42.410		
	(✡ 105) W.	3.0	21.0	39.4	19 21.13	1 43.550	4 30.93	58.821
	Comet	45.0	2.6	21.2	24 2.93	5 41.432		
	(✡ 105) W.	14.5	32.4	50.4	28 32.43	1 43.292	— 4 29.50	+ 58.101
20	Comet	6.5	23.8	41.3	17 45 23.53	1 46.552		
	3273, Radcliffe	34.2	51.4	9.4	49 51.67	5 42.608	— 4 28.14	— 56.017
	Comet	22.8	40.0	57.6	51 40.13	1 46.072		
	3273, Radcliffe	50.0	7.3	25.2	56 7.57	5 42.670	4 27.44	56.559
	(* 12)	51.7	8.9	27.2	56 9.30	Same as p.✡		
	Comet	50.6	8.0	24.9	58 7.83	1 45.799		
	3273, Radcliffe	16.9	34.2	52.4	18 2 34.57	5 42.850	4 26.74	57.012
	Comet	43.3	0.8	17.8	4 0.63	1 45.430		
	3273, Radcliffe	9.0	26.3	44.5	8 26.60	5 42.773	4 25.97	57.304
	Comet	41.6	58.9	16.6	9 59.03	1 45.135		
	3273, Radcliffe	6.9	24.3	42.3	14 24.51	5 42.898	— 4 25.48	— 57.724
23	Comet	25.8	42.8	0.0	16 51 42.87	5 40.425		
	3293, Radcliffe	- -	34.8	51.8	56 34.77	1 27.362	— 4 51.90	+ 73.024
	Comet	5.7	22.2	40.0	59 22.63	5 43.600		
	3293, Radcliffe	57.9	14.3	31.6	17 4 14.60	1 30.829	4 51.97	72.732
	Comet	44.6	1.4	18.9	6 1.63	5 43.282		
	3293, Radcliffe	35.9	52.7	9.8	10 52.80	1 30.790	4 51.17	72.453
	Comet	17.2	34.3	51.6	12 34.37	5 42.711		
	3293, Radcliffe	8.4	25.2	42.0	17 25.20	1 30.815	4 50.83	71.857
	Comet	42.9	0.0	17.3	19 0.07	5 42.328		
	3293, Radcliffe	34.0	51.0	7.8	23 50.93	1 40.800	4 50.86	71.489
	Comet	14.8	01.3	49.3	25 31.80	5 41.910		
	3293, Radcliffe	- -	21.6	38.4	30 21.50	1 30.869	4 49.70	71.002
	Comet	44.8	1.6	19.6	32 2.00	5 41.639		
	3293, Radcliffe	34.7	51.7	8.4	36 51.60	1 30.832	— 4 49.60	+ 70.768
24	Comet	40.5	56.9	13.9	16 25 57.10	3 36.831		
	3293, Radcliffe	45.3	2.0	19.0	29 2.10	3 45.022	— 3 5.00	— 8.191
	Comet	36.2	53.2	10.2	30 53.20	3 36.466		
	3293, Radcliffe	41.0	57.9	14.9	33 57.93	3 45.100	3 4.73	6.634
	Comet	15.6	32.4	49.4	35 32.47	3 36.140		
	3293, Radcliffe	20.0	36.5	53.9	38 36.80	3 44.929	3 4.33	8.789
	Comet	50.9	7.2	24.7	40 7.60	3 35.880		
	3293, Radcliffe	54.8	11.5	28.9	43 11.73	3 44.890	— 3 4.13	— 9.010

RESULTS.

m. s.
Corr. Chron. — 2 56.39

	α	δ
	h. m. s.	° ′ ″
(✡ 105) W.,	14 36 24.24	+53 1 38.58

Comet—(✡ 105) W.,

		Δα	Δδ
	h. m. s.	m. s.	′ ″
Sid. T.	16 12 51.21	— 4 30.63	+15 1.23
	Δρ	+ .01	+ .26
	p	+ .58	— 3.11

m. s.
Corr. Chron. — 3 14.49

	α	δ
	h. m. s.	° ′ ″
3273, Radcliffe,	14 45 4.14	+51 57 2.97

Comet—3273, Radcliffe,

		Δα	Δδ
	h. m. s.	m. s.	′ ″
Sid. T.	17 54 35.74	— 4 26.75	—14 34.88
	Δρ	— .02	.24
	p	+ .87	— .36

m. s.
Corr. Chron. — 3 22.43

	α	δ
	h. m. s.	° ′ ″
3293, Radcliffe,	14 51 48.61	+50 11 54.37

Comet—3293, Radcliffe,

		Δα	Δδ
	h. m. s.	m. s.	′ ″
Sid. T.	17 8 56.92	— 4 50.86	+18 25.11
	Δρ	+ .02	+ .31
	p	+ .57	— 1.16

(Continued.)

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COMET, 1861, II.

DATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT. A.	B.	C.	Mean.	MIC.	COMET—STAR. Δ α	Δ mic.
1861.		s.	s.	s.	h. m. s.	w. revs.	m s.	revs.
July 24	Comet - - - -	32.9	49.7	6.9	16 44 49.83	3 35.651		
	3293, Radcliffe - -	36.8	53.4	10.8	47 53.67	3 44.798	— 3 3.84	— 9.147
	Comet - - - -	6.4	23.0	40.0	49 23.13	2 48.205		
	3293, Radcliffe - -	- -	26.5	43.2	52 26.48	3 44.850	3 3.35	9.503
	Comet - - - -	37.8	54.7	11.4	53 54.63	2 47.910		
	3293, Radcliffe - -	40.6	57.2	14.6	56 57.47	3 44.798	3 2.84	9.746
	Comet - - - -	7.4	24.4	41.3	59 24.37	2 47.681		
	3293, Radcliffe - -	10.4	27.0	44.6	17 2 27.33	3 44.892	3 2.95	10.069
	Comet - - - -	31.3	48.5	5.5	3 48.43	2 47.388		
	3293, Radcliffe - -	33.6	50.4	7.9	6 50.63	3 44.910	3 2.20	10.380
	Comet - - - -	5.1	21.8	38.8	8 21.90	2 47.014		
	3293, Radcliffe - -	7.2	23.9	41.0	11 24.03	3 44.701	— 3 2.13	— 10.545
25	Comet - - - -	5.8	22.7	40.2	16 50 22.90	5 37.882		
	A. Z, 2, 21 - - -	33.8	49.7	6.5	50 50.00	3 37.642		
	A. Z., 2, 22 - - -	58.4	15.0	31.7	51 15.03	2 38.372	— 0 52.13	+ 42.468
	Comet - - - -	5.6	- -	38.9	53 22.25	5 37.391		
	A. Z, 2, 22 - - -	57.8	- -	31.1	54 14.45	2 38.116	0 52.20	42.233
	Comet - - - -	29.5	45.6	2.9	55 46.00	5 37.572		
	A. Z, 2, 22 - - -	21.9	38.0	55.2	56 38.37	2 38.319	0 52.37	42.211
	Comet - - - -	38.9	55.4	12.4	58 55.57	5 37.483		
	A. Z., 2, 22 - - -	30.7	47.0	4.2	59 47.30	2 38.369	0 51.73	42.072
	Comet - - - -	43.5	0.1	17.0	17 9 0.20	5 37.010		
	A. Z., 2, 22 - - -	35.2	51.6	8.2	9 51.67	2 38.427	0 51.47	41.541
	Comet - - - -	32.7	49.3	5.7	11 49.23	5 36.669		
	A. Z., 2, 22 - - -	24.0	40.2	57.2	12 40.47	2 38.301	0 51.24	41.326
	Comet - - - -	18.9	35.3	52.3	15 35.50	5 33.869		
	A. Z., 2, 22 - - -	- -	26.6	43.4	16 26.70	2 35.939	0 51.20	40.888
	Comet - - - -	10.8	27.6	44.4	18 27.60	5 33.710		
	A. Z., 2, 22 - - -	1.9	17.9	34.8	19 18.20	2 35.862	0 50.60	40.806
	Comet - - - -	37.1	53.3	11.0	20 53.80	5 33.651		
	A. Z., 2, 22 - - -	27.9	44.4	1.2	21 44.50	2 35.998	0 50.70	40.611
	Comet - - - -	15.3	32.2	49.0	23 32.17	5 33.535		
	A. Z., 2, 22 - - -	6.0	22.9	39.7	24 22.87	2 35.930	0 50.70	40.563
	Comet - - - -	29.2	45.7	2.8	25 45.90	5 33.665		
	A. Z., 2, 22 - - -	19.5	36.2	53.0	26 36.23	2 35.911	— 0 50.33	+ 40.712
27	A. Z., 2, 23 - - -	12.9	29.8	46.3	17 10 29.67	1 40.620	+ 1 7.80	+ 61.193
	Comet - - - -	- -	- -	54.1	11 37.47	5 41.852		
	A. Z., 2, 23 - - -	14.9	31.3	48.6	17 31.60	1 40.590	1 7.90	60.921
	Comet - - - -	22.8	39.5	56.2	18 39.50	5 41.550		
	A. Z., 2, 23 - - -	18.6	34.8	51.4	20 34.93	1 40.521	1 7.44	60.992
	Comet - - - -	25.9	42.4	58.8	21 42.37	5 41.552		
	A. Z., 2, 23 - - -	47.4	3.6	20.5	28 3.83	1 40.602	1 8.07	60.279
	Comet - - - -	55.0	11.6	29.1	29 11.90	5 40.920		
	A. Z., 2, 23 - - -	14.6	30.4	47.2	31 30.73	1 40.610	1 8.20	60.323
	Comet - - - -	- -	- -	55.4	32 38.93	5 40.972		
	A. Z., 2, 23 - - -	49.2	6.2	23.2	34 6.20	1 40.729	+ 1 8.97	+ 59.962
	Comet - - - -	58.7	14.8	32.0	35 15.17	5 40.730		

RESULTS.

Corr. Chron. — 3 26.31 (m. s.)

	α (h. m. s.)	δ (° ′ ″)
3293, Radcliffe,	14 51 48.58	+50 11 54.28

Comet—3293, Radcliffe,

		△α (m. s.)	△δ (′ ″)
Sid. T.	16 43 46.96	— 3 3.55	— 2 24.49
	Δ ρ	— .00	.04
	p	+ .46	— 1.51

Corr. Chron. — 3 30.94 (m. s.)

	α (h. m. s.)	δ (° ′ ″)
A. Z., 2, 22,	14 51 20.47	+49 38 39.92

Comet—A. Z., 2, 22,

		△α (m. s.)	△δ (′ ″)
Sid. T.	17 5 53.71	— 0 51.33	+10 36.35
	Δ ρ	+ .01	.18
	p	+ .50	+ 1.05

Corr. Chron. — 3 42.97 (m. s.)

	α (h. m. s.)	δ (° ′ ″)
A. Z., 2, 23,	14 52 29.91	+48 56 54.99

Comet—A. Z., 2, 23,

		△α (m. s.)	△δ (′ ″)
Sid. T.	17 23 27.66	+ 1 8.22	+15 29.72
	Δ ρ	.02	+ .26
	p	+ .52	— .62

(Continued.)

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COMET 1861, II.

DATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT. A.	B.	C.	Mean.	MIC.	COMET—STAR. Δα	Δ mic.
1861.		s.	s.	s.	h. m. s.	w. revs.	m. s.	revs.
July 27	A. Z, 2, 23	43.4	59.8	16.5	17 39 59.90	1 40.765	+ 1 9.17	+ 59.768
	Comet	52.4	9.6	25.2	41 9.07	5 40.572		
30	Comet	58.8	15.2	31.7	16 54 15.23	5 39.929		
	3317, Radcliffe	30.0	45.9	2.6	55 46.17	2 31.602	— 1 30.94	+ 51.285
	Comet	11.4	27.3	44.4	59 27.70	5 39.842		
	3317, Radcliffe	42.9	58.9	15.2	17 0 59.00	2 31.641	1 31.30	51.159
	Comet	25.7	42.0	58.7	2 42.13	5 39.542		
	3317, Radcliffe	56.2	12.3	29.1	4 12.53	2 31.602	1 30.40	50.898
	Comet	25.6	41.8	58.5	7 41.97	5 39.369		
	3317, Radcliffe	54.3	10.1	26.7	9 10.37	2 31.692	1 28.40	50.635
	Comet	38.2	54.0	11.3	10 54.50	5 39.165		
	3317, Radcliffe	5.9	22.0	38.5	12 22.13	2 31.620	1 27.63	50.503
	Comet	35.1	51.7	8.5	13 51.77	5 38.879		
	3317, Radcliffe	- -	19.0	35.4	15 18.87	2 31.595	1 27.10	50.242
	Comet	4.4	20.2	37.2	17 20.60	5 38.900		
	3317, Radcliffe	32.4	48.6	5.1	18 48.70	2 31.591	— 1 28.10	+ 50.167
Aug. 1	3317, Radcliffe	34.5	50.6	7.2	17 15 50.77	5 31.540	+ 1 3.71	— 60.609
	Comet	38.8	54.7	10.9	16 54.48	1 30.892		
	3317, Radcliffe	26.7	42.0	59.6	18 42 77	5 31.522	1 4.20	60.561
	Comet	30.9	47.9	3.0	19 46.97	1 30.922		
	3317, Radcliffe	55.3	11.2	27.6	21 11.37	5 31.498	1 3.86	60.638
	Comet	59.1	15.3	31.3	22 15.23	1 30.821		
	3317, Radcliffe	39.4	55.9	12.3	23 55.87	5 31.602	1 4.03	60.663
	Comet	43.7	69.6	16.4	24 59.90	1 30.900		
	3317, Radcliffe	47.0	3.4	19.7	28 3.37	5 38.300	1 4.60	61.021
	Comet	52.2	8.0	23.7	29 7.97	1 37.240		
	3317, Radcliffe	5.3	21.6	38.0	29 21.63	5 38.188	1 4.60	60.931
	Comet	10.0	26.2	42.5	30 26.23	1 37.218		
	3317, Radcliffe	43.6	59.6	16.2	31 59.80	5 38.201	1 4.83	61.073
	Comet	48.6	4.5	20.8	33 4.63	1 37.089		
	3317, Radcliffe	54.6	10.8	27.3	33 10.90	5 38.205	1 4.90	61.268
	Comet	59.8	15.9	31.7	34 15.80	1 36.898		
	3317, Radcliffe	13.5	29.8	46.3	36 29.87	5 38.200	1 5.10	61.471
	Comet	19.0	35.0	50.9	37 34.97	1 36.690		
	3317, Radcliffe	42.3	57.8	14.7	38 58.27	5 38.261	+ 1 5.10	— 61.473
	Comet	47.5	3.2	19.4	40 3.37	1 36.749		
4	(* 9)	18.3	34.8	49.6	17 36 34.23	3 40.729		
	Comet	1.8	17.4	33.5	37 17.57	1 41.640		
	Σ. Cat. G., 1697, prec.	20.5	36.1	52.1	39 36.23	2 43.385	— 2 18.66	— 18.748
	Σ. Cat. G, 1697, seq.	22.4	38.6	54.3	39 38.43	2 42.858		
	Comet	52.4	8.0	24.2	42 8.20	1 41.295		
	Σ. Cat. G., 1697, p.	10.5	26.2	42.4	44 26.37	2 43.305	2 18.17	19.013
	Comet	31.0	46.8	2.9	45 46.90	1 41.112		
	Σ. Cat. G., 1697, p.	49.2	5.3	20.9	48 5.13	2 43.310	2 18.23	19.201
	Comet	11.2	26.5	42.7	49 26.80	1 41.029		
	Σ. Cat. G., 1697, p.	28.8	44.8	0.9	51 44.83	2 43.398	— 2 18.03	— 19.372

RESULTS.

Corr. Chron. — 3 m. 56.85 s.

	α h. m. s.	δ ° ′ ″
3317, Radcliffe,	14 59 14.99	+48 11 42.92

Comet—3317, Radcliffe,

		△α m. s.	△δ ′ ″
Sid. T.	17 2 39.42	— 1 29.12	+12 59.20
	Δρ	— .01	+ .22
	p	+ .39	— .81

Corr. Chron. — 4 m. 4.81 s.

	α h. m. s.	δ ° ′ ″
3317, Radcliffe,	14 59 14.95	+48 11 42.71

Comet—3317, Radcliffe,

		△α m. s.	△δ ′ ″
Sid. T.	17 24 46.14	+ 1 4.49	—15 37.10
	Δρ	— .01	.26
	p	+ .42	— .49

Corr. Chron. — 4 m. 17.14 s.

	α h. m. s.	δ ° ′ ″
Σ. Cat. G., 1697, p.,	15 6 10.95	+47 12 30.41

Comet—Σ. Cat. G., 1697, p.,

		△α m. s.	△δ ′ ″
Sid. T.	17 43 19.90	— 2 18.15	— 4 55.64
	Δρ	.00	.08
	p	+ .42	— .02

(Continued.)

COMET 1861, II.

DATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT. A.	B.	C.	Mean.	MIC.	COMET—STAR. Δ a	Δ mic.
1861.		s.	s.	s.	h. m. s.	w. revs.	m. s.	revs.
Aug. 4	Comet - - - -	45.2	0.9	16.9	17 53 1.00	1 40.910		
	Σ. Cat. G., 1697, p. -	3.2	18.9	34.8	55 18.97	2 43.478	— 2 17.97	— 19.571
	(* 8.5) - - - -	1.3	17.3	33.3	57 17.30	3 40.830		
	Comet - - - -	45.8	1.7	17.9	58 1.80	1 40.939		
	Σ. Cat. G., 1697, p. -	3.7	19.4	35.8	18 0 19.63	2 43.442	— 2 17.83	— 19.506
6	A. Z., 118, 8 - - -	4.9	20.6	36.9	17 39 20.80	4 45.532	+ 2 4.77	— 24.150
	Comet - - - -	9.9	25.6	41.2	41 25.57	2 47.275		
	A. Z., 118, 8 - - -	51.5	7.3	23.5	43 7.43	4 45.675	2 4.97	24.573
	Comet - - - -	56.9	12.4	27.9	45 12.40	2 46.995		
	A. Z., 118, 8 - - -	41.3	57.2	13.4	46 57.30	4 45.549	2 5.30	24.342
	Comet - - - -	46.9	2.6	18.3	49 2.60	2 47.100		
	A. Z., 118, 8 - - -	9.7	25.2	41.3	50 25.40	4 45.561	2 5.35	24.744
	Comet - - - -	- -	30.7	46.5	52 30.75	2 46.710		
	A. Z., 118, 8 - - -	50.0	5.9	21.9	54 5.93	4 45.510	+ 2 5.67	— 24.613
	Comet - - - -	55.7	11.8	27.3	56 11.60	2 46.790		
15	A. Z., 118, 21 - -	56.6	12.0	27.5	17 38 12.03	3 48.672	+ 1 56.35	— 18.865
	Comet - - - -	- -	8.0	24.0	40 8.38	2 42.665		
	A. Z., 118, 21 - -	23.2	38.2	54.7	42 38.70	3 48.561	1 57.13	18.708
	Comet - - - -	20.7	35.8	51.0	44 35.83	2 42.711		
	A. Z., 118, 21 - -	56.2	11.8	27.2	47 11.73	3 48.570	1 56.97	19.033
	Comet - - - -	53.5	8.7	23.9	47 8.70	2 42.395		
	A. Z., 118, 21 - -	23.2	38.4	54.2	49 38.60	3 48.805	1 56.70	19.213
	Comet - - - -	- -	35.3	50.7	51 35.30	2 42.450		
	A. Z., 118, 21 - -	1.3	16.5	31.9	53 16.57	3 48.655	1 57.10	18.822
	Comet - - - -	58.6	13.6	28.8	55 13.67	2 42.691		
	A. Z., 118, 21 - -	57.4	12.6	27.9	57 12.63	3 48.830	1 57.24	19.419
	Comet - - - -	54.6	9.8	25.2	59 9.87	2 42.269		
	A. Z., 118, 21 - -	55.2	10.5	25.9	18 1 10.87	3 48.742	+ 1 57.45	— 19.202
	Comet - - - -	- -	7.9	23.4	3 8.32	2 42.398		
20	Comet - - - -	9.1	24.5	39.9	17 56 24.50	4 44.770		
	5093, Rumker - -	9.7	25.2	40.5	56 25.13	4 46.863	— 0 0.63	— 2.093
	Comet - - - -	59.0	13.9	29.6	59 14.17	4 44.460		
	5093, Rumker - -	59.6	14.9	29.8	59 14.77	4 46.759	0 0.60	2.299
	Comet - - - -	8.0	22.6	38.3	18 1 22.97	4 44.432		
	5093, Rumker - -	8.7	22.8	38.5	1 23.33	4 46.770	— 0 0.36	2.338
	5093, Rumker - -	23.0	38.0	53.2	4 38.07	4 46.909	+ 0 0.43	2.561
	Comet - - - -	23.4	38.4	53.7	4 38.50	4 44.348		
	5093, Rumker - -	54.8	10.2	25.3	7 10.10	4 46.831	0 0.70	2.520
	Comet - - - -	55.7	10.8	25.9	7 10.80	4 44.311		
	5093, Rumker - -	8.3	23.4	38.8	10 23.50	4 46.860	0 0.73	2.570
	Comet - - - -	9.2	23.9	39.6	10 24.23	4 46.290		
	5093, Rumker - -	10.9	25.9	41.3	11 26.03	4 46.749	0 0.84	2.714
	Comet - - - -	11.7	26.9	42.0	11 26.87	4 44.035		
	5093, Rumker - -	23.7	38.8	54.1	13 38.87	4 46.902	+ 0 0.86	— 2.930
	Comet - - - -	24.5	39.6	55.1	13 39.73	4 43.972		

RESULTS.

Aug. 6:

Corr. Chron. — 4 m. 25.36 s.

	α h. m. s.	δ ° ′ ″
A. Z., 118, 8,	15 4 3.34	+47 0 32.60

Comet—A. Z., 118, 8,

		Δα m. s.	Δδ ′ ″
Sid. T.	17 44 27.22	+ 2 5.21	— 6 16.31
	Δρ	.00	— .15
	p	+ .41	+ .03

Aug. 15:

Corr. Chron. + 0 m. 59.81 s.

	α h. m. s.	δ ° ′ ″
A. Z., 118, 21,	15 13 56.64	+45 31 19.88

Comet—A. Z., 118, 21,

		Δα m. s.	Δδ ′ ″
Sid. T.	17 52 51.25	+ 1 56.99	— 4 52.58
	Δρ	.00	— .08
	p	+ .31	+ .05

Aug. 20:

Corr. Chron. + 0 m. 23.21 s.

	α h. m. s.	δ ° ′ ″
5093, Rumker,	15 21 15.59	+44 47 18.77

Comet—5093, Rumker,

		Δα m. s.	Δδ ′ ″
Sid. T.	18 10 34.49	+ 0 0.49	— 0 40.89
	Δρ	.00	— .01
	p	+ .30	+ .23

(Continued.)

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COMET 1861, II.

DATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT. A.	B.	C.	Mean.	MIC.	COMET—STAR. Δ α	Δ mic.
1861.		s.	s.	s.	h. m. s.	w. revs.	m. s.	revs.
Aug. 20	5093, Rumker	13.4	28.3	43.8	17 15 28.50	4 46.968	+ 0 0.75	— 2.910
	Comet	- -	29.0	44.6	15 29.25	4 44.058		
	5093, Rumker	45.9	0.9	16.5	19 1.10	4 47.018	0 0.97	2.987
	Comet	46.9	1.9	17.4	19 2.07	4 44.031		
	5093, Rumker	26.1	41.2	56.4	20 41.23	4 47.000	0 1.07	2.988
	Comet	27.1	42.2	57.6	20 42.30	4 44.012		
	5093, Rumker	23.6	38.8	53.9	22 38.77	4 46.931	+ 0 1.16	— 3.021
	Comet	24.6	39.9	55.3	22 39.93	4 43.910		
23	3387, Radcliffe	8.9	24.0	39.2	18 32 24.03	4 29.590	+ 2 51.94	— 17.564
	Comet	0.8	16.2	30.9	35 15.97	2 37.919		
	3387, Radcliffe	24.9	40.0	55.4	36 40.10	3 42.812	2 52.00	17.838
	Comet	16.9	32.0	47.4	39 32.10	2 37.832		
	3387, Radcliffe	40.6	55.7	11.2	40 55.83	3 42.802	2 52.44	17.821
	Comet	33.0	48.4	3.4	43 48.27	2 37.839		
	3387, Radcliffe	45.0	59.8	15.4	45 0.07	3 42.862	2 52.35	17.790
	Comet	- -	52.2	7.7	47 52.42	2 37.930		
	3387, Radcliffe	59.8	15.2	30.4	49 15.13	3 43.034	2 52.67	17.897
	Comet	52.7	7.9	22.8	52 7.80	2 37.995		
	3387, Radcliffe	14.5	29.6	45.0	53 29.70	3 43.060	2 52.83	17.926
	Comet	7.5	22.6	37.5	56 22.53	2 37.992		
	3387, Radcliffe	56.5	11.7	27.1	18 58 11.77	3 43.159	+ 2 53.13	— 18.217
	Comet	49.6	4.9	20.2	19 1 4.90	2 37.800		
24	Comet	49.0	3.6	18.9	18 36 3.83	2 33.848		
	(☉ 9.5)	38.8	53.6	9.2	39 53.53	5 37.621		
	3411, Radcliffe	16.9	31.9	47.7	40 32.17	5 43.828	— 4 28.34	— 52.938
	Comet	42.0	57.3	12.3	42 57.20	2 33.946		
	3411, Radcliffe	9.0	24.9	40.0	47 24.63	5 43.806	4 27.43	52.818
	Comet	42.6	57.5	12.5	48 57.53	2 33.749		
	3411, Radcliffe	10.2	24.9	40.7	53 25.27	5 43.980	4 27.74	53.189
	Comet	38.4	53.4	8.4	54 53.40	2 33.765		
	3411, Radcliffe	5.4	20.6	35.9	59 20.63	5 44.112	4 27.23	53.305
	Comet	56.0	10.8	26.3	19 1 11.03	2 33.665		
	3411, Radcliffe	22.5	37.6	53.3	5 37.80	5 44.288	— 4 26.77	— 53.581
31	3413, Radcliffe	4.3	19.0	34.0	18 37 19.10	2 44.195	+ 3 4.17	— 11.488
	Comet	8.6	23.2	38.0	40 23.27	1 49.710		
	3413, Radcliffe	53.7	8.6	23.7	42 8.67	2 44.290	3 4.26	11.763
	Comet	58.2	13.0	27.6	45 12.93	1 49.530		
	3413, Radcliffe	28.5	43.4	58.3	46 43.40	2 44.485	3 4.70	11.966
	Comet	33.2	- -	- -	49 48.10	1 49.522		
	3413, Radcliffe	13.4	28.2	43.4	54 28.33	2 44.459	3 5.00	11.792
	Comet	18.7	33.2	48.2	57 33.33	1 49.670		
	3413, Radcliffe	47.1	1.5	16.8	59 1.80	2 44.575	3 5.03	11.586
	Comet	52.0	6.6	21.9	19 2 6.83	1 49.992		
	3413, Radcliffe	13.2	27.9	43.0	3 28.03	2 44.750	+ 3 5.67	— 12.003
	Comet	18.8	33.5	48.8	6 33.70	1 49.750		

RESULTS.

Aug. 23:

Corr. Chron. m. s. + 0 7.54

	α h. m. s.	δ ° ′ ″
3387, Radcliffe,	15 21 40.41	+ 44 29 29.89

Comet—3387, Radcliffe,

		Δα m. s.	Δδ ′ ″
Sid. T.	18 48 8.11	+ 2 52.48	— 4 34.56
	Δρ	.00	— .08
	p	+ .33	+ .61

Aug. 24:

Corr. Chron. m. s. + 0 0.35

	α h. m. s.	δ ° ′ ″
3411, Radcliffe,	15 30 7.70	+ 44 31 58.05

Comet—3411, Radcliffe,

		Δα m. s.	Δδ ′ ″
Sid. T.	18 48 48.95	— 4 27.50	—13 37.11
	Δρ	— .01	— .23
	p	+ .32	+ .55

(Continued.)

COMET 1861, II.

DATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT. A.	B.	C.	Mean.	MIC.	COMET—STAR. Δ α	Δ mic.
1861.		s.	s.	s.	h. m. s.	w. revs.	m. s.	revs.
Aug. 31	3413, Radcliffe	3.6	18.4	33.6	19 8 18.53	2 44.848	+ 3 5.20	— 11.9
	Comet	9.2	23.2	38.8	11 23.73	1 49.902		
	3413, Radcliffe	26.2	40.9	55.9	12 41.00	2 45.092	3 6.07	12.394
	Comet	31.9	47.2	2.1	15 47.07	1 49.701		
	3413, Radcliffe	59.9	14.4	29.6	21 14.63	2 45.230	3 6.30	12.454
	Comet	6.2	20.8	35.8	24 20.93	1 49.779		
	3413, Radcliffe	34.7	49.3	4.5	26 49.50	2 45.390	+ 3 6.50	— 12.642
	Comet	- -	55.8	11.0	29 56.00	1 49.751		
Sept. 2	3431, Radcliffe	4.7	19.0	34.0	19 5 19.23	1 39.109	+ 1 4.90	+ 57.437
	Comet	- -	24.4	38.4	6 24.13	5 36.585		
	3431, Radcliffe	10.1	25.0	39.8	8 24.97	1 39.156	1 4.40	57.466
	Comet	- -	29.4	44.2	9 29.37	5 36.661		
	3431, Radcliffe	25.5	40.1	54.9	11 40.17	1 39.342	1 4.16	57.189
	Comet	29.4	44.4	59.2	12 44.33	5 36.570		
	3431, Radcliffe	6.4	21.3	36.4	14 21.37	1 39.245	1 4.10	57.276
	Comet	11.0	25.3	40.1	15 25.47	5 36.560		
	3431, Radcliffe	46.9	1.8	16.4	17 1.90	1 39.460	1 4.20	57.262
	Comet	51.2	6.1	21.0	18 6.10	5 36.761		
	3431, Radcliffe	25.2	40.2	54.4	19 39.93	1 39.598	1 4.50	57.393
	Comet	29.7	44.4	59.2	20 44.43	5 37.030		
	3431, Radcliffe	51.9	6.5	21.8	22 6.73	1 39.569	1 5.05	57.157
	Comet	- -	11.8	26.6	23 11.78	5 36.765		
	3431, Radcliffe	22.3	36.9	51.8	24 37.00	1 39.682	1 4.67	57.059
	Comet	27.1	41.7	56.2	25 41.67	5 36.780		
	3431, Radcliffe	30.4	45.2	0.2	27 45.27	1 39.685	1 5.10	56.958
	Comet	35.6	50.3	5.2	28 50.37	5 36.682		
	3431, Radcliffe	5.2	19.8	34.7	30 19.90	1 39.806	1 5.00	57.175
	Comet	10.0	24.9	39.8	31 24.90	5 37.020		
	3431, Radcliffe	30.4	45.4	0.8	32 45.53	1 39.719	1 5.30	57.194
	Comet	35.3	50.9	6.3	33 50.83	5 36.952		
	3431, Radcliffe	28.4	42.8	57.7	35 42.97	1 39.810	+ 1 5.43	+ 57.056
	Comet	33.6	48.4	3.2	36 48.40	5 36.905		
6	Comet	47.1	1.6	17.2	20 8 1.97	5 33.228		
	3448, Radcliffe	40.2	54.7	9.8	8 54.90	2 41.652	— 0 52.93	+ 34.534
	Comet	22.0	36.6	51.8	11 36.80	5 33.298		
	3448, Radcliffe	15.2	29.9	44.9	12 30.00	2 41.650	0 53.20	34.606
	Comet	6.6	21.0	35.8	14 21.13	5 33.210		
	3448, Radcliffe	59.2	13.9	29.0	15 14.03	2 41.811	0 52.90	34.357
	Comet	46.9	1.7	16.7	21 1.77	5 33.268		
	3448, Radcliffe	39.7	54.6	9.6	21 54.63	2 42.159	0 52.86	34.067
	Comet	57.9	11.9	26.9	25 12.23	5 33.260		
	3448, Radcliffe	49.4	4.2	19.2	26 4.27	2 42.398	0 52.04	33.820
	Comet	40.2	55.3	10.1	27 55.20	5 33.470		
	3448, Radcliffe	32.5	47.2	2.2	28 47.30	2 42.390	0 52.10	34.038
	Comet	10.4	25.7	40.6	31 25.57	5 33.465		
	3448, Radcliffe	2.8	17.2	32.4	32 17.80	3 29.832	— 0 52.23	+ 33.494

RESULTS.

Corr. Chron. — 1 m. 4.76 s.

	α (h. m. s.)	δ (° ′ ″)
3413, Radcliffe,	15 30 25.95	+ 43 37 39.15

Comet—3413, Radcliffe,

		Δα (m. s.)	Δδ (′ ″)
Sid. T.	19 3 13.83	+ 3 5.29	— 3 4.49
	Δρ	.00	— .06
	p +	.30	+ .67

Corr. Chron. — 1 m. 12.68 s.

	α (h. m. s.)	δ (° ′ ″)
3431, Radcliffe,	15 34 47.06	+43 8 47.25

Comet—3431, Radcliffe,

		Δα (m. s.)	Δδ (′ ″)
Sid. T.	19 20 40.80	+ 1 4.73	+14 39.42
	Δρ	.01	.25
	p +	.30	+ .81

Corr. Chron. — 1 m. 38.08 s.

	α (h. m. s.)	δ (° ′ ″)
3448, Radcliffe,	15 41 30.62	+42 53 56.96

Comet—3448, Radcliffe,

		Δα (m. s.)	Δδ (′ ″)
Sid T.	20 21 50.02	— 0 52.49	+ 8 43.95
	Δρ +	.01	.17
	p +	.33	+ 1.41

(Continued.)

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COMET 1861, II.

DATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT. A.	B.	C.	Mean.	MIC.	COMET—STAR. Δ α	Δ mic.
1861.		s.	s.	s.	h. m. s.	w. revs.	m. s.	revs.
Sept. 6	Comet - - - -	49. 0	3. 8	18. 5	20 34 3. 77	5 33. 995		
	3448, Radcliffe - -	40. 9	55. 8	10. 7	34 55. 80	3 29. 879	— 0 52. 03	+ 33. 977
	Comet - - - -	19. 6	34. 5	49. 5	37 34. 47	5 34. 045		
	3448, Radcliffe - -	11. 8	26. 5	41. 5	38 26. 60	3 29. 980	— 0 52. 13	+ 33. 926
7	3448, Radcliffe - -	10. 8	25. 9	40. 6	19 28 25. 77	2 30. 765	+ 0 16. 90	+ 16. 648
	Comet - - - -	28. 2	42. 9	56. 9	28 42. 67	3 34. 555		
	3448, Radcliffe - -	18. 4	32. 6	47. 4	31 32. 80	2 30. 788	0 16. 90	16. 980
	Comet - - - -	35. 2	49. 4	4. 5	31 49. 70	3 34. 910		
	3448, Radcliffe - -	11. 0	25. 6	40. 4	33 25. 67	2 31. 010	0 16. 76	16. 673
	Comet - - - -	27. 8	42. 6	56. 9	33 42. 43	3 34. 825		
	3448, Radcliffe - -	14. 8	29. 6	44. 4	35 29. 60	2 30. 963	0 16. 90	16. 754
	Comet - - - -	32. 0	46. 3	1. 2	35 46. 50	3 34. 859		
	3448, Radcliffe - -	54. 4	9. 0	23. 6	38 9. 00	2 31. 062	+ 0 17. 27	+ 16. 206
	Comet - - - -	11. 5	26. 4	40. 9	38 26. 27	3 34. 410		
9	Comet - - - -	17. 0	31. 8	46. 8	19 42 31. 87	2 39. 438		
	3462, Radcliffe - -	20. 7	35. 0	50. 3	44 35. 33	5 35. 450	— 2 3. 46	— 38. 970
	3464, Radcliffe - -	- -	12. 5	27. 6	46 12. 73	3 32. 401		
	3473, Radcliffe - -	55. 8	10. 5	25. 7	49 10. 67	5 32. 680		
	Comet - - - -	25. 9	40. 7	55. 6	51 40. 73	2 39. 928		
	3462, Radcliffe - -	28. 6	43. 4	58. 4	53 43. 47	5 35. 829	2 2. 74	38. 859
	Comet - - - -	0. 9	15. 2	29. 8	55 15. 30	2 39. 961		
	3462, Radcliffe - -	2. 8	17. 7	32. 6	57 17. 70	5 35. 778	2 2. 40	38. 775
	Comet - - - -	18. 7	32. 9	47. 8	58 33. 13	2 40. 048		
	3462, Radcliffe - -	20. 2	34. 9	50. 2	20 0 35. 10	5 35. 959	2 1. 97	38. 869
	Comet - - - -	33. 7	48. 0	3. 6	1 48. 43	2 39. 930		
	3462, Radcliffe - -	35. 6	50. 4	5. 6	3 50. 53	5 36. 110	2 2. 10	39. 138
	Comet - - - -	56. 2	11. 2	25. 4	5 10. 93	2 39. 900		
	3462, Radcliffe - -	57. 9	12. 7	27. 6	7 12. 73	5 36. 145	2 1. 80	39. 203
	Comet - - - -	58. 6	13. 0	27. 6	9 13. 07	2 39. 950		
	3462, Radcliffe - -	- -	14. 8	29. 9	11 15. 12	5 36. 125	2 2. 05	39. 133
	Comet - - - -	42. 8	56. 9	11. 7	12 57. 13	2 40. 230		
	3462, Radcliffe - -	44. 0	58. 6	13. 7	14 58. 77	5 36. 502	2 1. 64	39. 230
	Comet - - - -	12. 2	27. 0	41. 4	16 26. 87	2 40. 185		
	3462, Radcliffe - -	13. 5	27. 8	43. 0	18 28. 03	5 36. 510	— 2 1. 16	— 39. 283
13	3464, Radcliffe - -	3. 2	18. 0	33. 2	20 4 18. 13	5 46. 190	+ 1 19. 07	— 70. 819
	Comet - - - -	22. 0	- -	52. 4	5 37. 20	1 35. 332		
	3464, Radcliffe - -	36. 2	50. 8	- -	7 50. 83	5 46. 311	1 18. 20	70. 884
	Comet - - - -	54. 5	8. 9	23. 7	9 9. 03	1 35. 388		
	3464, Radcliffe - -	18. 2	32. 9	47. 9	11 33. 00	5 46. 425	1 18. 57	70. 878
	Comet - - - -	37. 2	51. 3	6. 2	12 51. 57	1 35. 508		
	3464, Radcliffe - -	4. 0	18. 9	34. 0	15 18. 97	5 46. 610	1 18. 23	70. 959
	Comet - - - -	22. 8	36. 9	51. 9	16 37. 20	1 35. 612		
	3464, Radcliffe - -	28. 3	42. 9	58. 1	23 43. 10	5 46. 870	+ 1 19. 55	— 70. 912
	Comet - - - -	- -	2. 8	17. 3	25 2. 65	1 35. 919		

RESULTS.

m. s.
Corr. Chron. — 1 44. 67

	α h. m. s.	δ ° ′ ″
3448, Radcliffe,	15 41 30. 59	+42 53 56. 82

Comet—3448, Radcliffe,

	Δα m. s.	Δδ ′ ″
Sid. T. 19 31 56. 84	+ 0 16. 95	+ 4 15. 93
Δρ	. 00	. 07
p +	. 29	+ . 84

m. s.
Corr. Chron. — 1 57. 41

	α h. m. s.	δ ° ′ ″
3462, Radcliffe,	15 46 16. 10	+42 58 55. 52

Comet—3462, Radcliffe,

	Δα m. s.	Δδ ′ ″
Sid. T. 20 6 13. 42	— 2 2. 15	—10 0. 20
Δρ	— . 01	— . 19
p +	. 30	+ 1. 10

m. s.
Corr. Chron. — 2 36. 60

	α h. m. s.	δ ° ′ ″
3464, Radcliffe,	15 47 53. 64	+42 50 24. 40

Comet—3464, Radcliffe,

	Δα m. s.	Δδ ′ ″
Sid. T. 20 16 8. 74	+ 1 18. 70	—18 10. 20
Δρ	— . 02	— . 33
p +	. 29	+ 1. 14

(Continued.)

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COMET 1861, II.

DATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT. A.	B.	C.	Mean.	MIC.	COMET—STAR. Δ α	Δ mic.
		s.	s.	s.	h. m. s.	w. revs.	m. s.	revs.
1861. Sept. 13	3464, Radcliffe	59.4	14.4	29.5	20 28 14.43	5 46.932	+ 1 19.07	— 70.830
	Comet	18.8	33.7	48.0	29 33.50	1 36.063		
	3464, Radcliffe	53.3	7.9	22.9	31 8.03	5 47.248	+ 1 18.20	— 71.251
	Comet	11.6	26.3	40.8	32 26.23	1 35.958		
14	Comet	32.5	46.5	0.8	19 57 46.60	2 38.021		
	B. Z., 418, 60	9.6	24.2	39.3	20 0 24.37	5 32.940	— 2 37.77	— 37.877
	Comet	58.4	12.6	27.2	2 12.73	2 38.422		
	B. Z, 418, 60	35.5	- -	5.0	4 50.25	5 33.272	2 37.52	37.808
	Comet	1.2	15.4	30.2	6 15.60	2 38.178		
	B. Z, 418, 60	38.4	52.9	7.9	8 53.07	5 33.422	2 37.47	38.202
	Comet	6.4	19.6	34.5	10 20.17	2 38.375		
	B. Z., 418, 60	42.4	56.9	11.9	12 57.07	5 33.598	2 36.90	38.181
	Comet	16.2	30.8	45.4	14 30.80	2 38.501		
	B. Z., 418, 60	53.1	7.7	22.3	17 7.70	5 33.832	2 36.90	38.289
	Comet	44.7	58.9	13.1	19 58.90	2 38.029		
	B. Z., 418, 60	20.7	35.4	50.6	22 35.57	5 33.691	2 36.67	38.620
	Comet	30.7	45.4	59.9	24 45.33	2 38.691		
	B. Z., 418, 60	6.9	21.4	36.4	27 21.57	5 33.912	2 36.24	38.179
	Comet	41.3	55.6	10.5	29 55.80	2 38.650		
	B. Z., 418, 60	17.0	31.3	46.2	32 31.50	5 34.249	2 35.70	38.557
	Comet	43.7	58.4	12.8	36 58.30	2 38.921		
	B. Z., 418, 60	19.0	33.4	48.4	39 33.60	5 34.525	2 35.30	38.562
	Comet	22.9	37.4	- -	41 37.62	2 39.005		
	B. Z., 418, 60	57.4	11.6	26.9	44 11.97	5 34.568	— 2 34.35	— 38.521
20	Comet	2.4	17.1	31.8	21 9 17.10	4 40.995		
	(✡ 106) W.	42.9	57.9	12.2	10 57.67	1 48.929	— 1 40.57	— 34.961
	Comet	23.2	37.6	52.3	13 37.70	4 40.813		
	(✡ 106) W.	3.8	17.4	32.9	15 18.03	1 48.782	1 40.33	34.926
	Comet	4.8	19.4	33.7	22 19.30	4 40.282		
	(✡ 106) W.	44.8	59.5	13.9	23 59.40	1 48.150	1 40.10	35.027
	Comet	59.8	14.3	28.7	26 14.27	4 40.155		
	(✡ 106) W.	39.3	54.6	8.8	27 54.23	1 48.045	1 39.96	35.005
	Comet	9.9	24.4	38.8	29 24.37	4 40.061		
	(✡ 106) W.	49.8	4.2	19.3	31 4.43	1 47.869	— 1 40.06	— 35.087
22	(✡ 106) W.	19.8	34.4	49.9	20 2 34.67	1 40.659	+ 0 53.36	— 56.224
	Comet	13.3	28.1	42.7	3 28.03	5 36.922		
	(✡ 106) W.	46.4	0.9	15.8	6 1.03	1 40.301	0 53.97	56.688
	Comet	40.4	55.2	9.4	6 55.00	5 37.028		
	(✡ 106) W.	46.7	1.0	15.8	9 1.17	1 40.228	0 54.30	57.044
	Comet	- -	55.6	9.8	9 55.47	5 37.311		
	(✡ 106) W.	29.5	43.9	58.2	11 43.87	1 40.120	0 54.73	56.669
	Comet	23.7	38.9	53.2	12 38.60	5 36.828		
	(✡ 106) W.	0.2	14.7	29.0	14 14.63	1 40.251	+ 0 54.87	— 56.612
	Comet	53.0	9.6	23.9	15 9.50	5 36.902		

RESULTS.

Corr. Chron. — 2 m. 44.31 s.

	α h. m. s.	δ ° ′ ″
B. Z., 418, 60,	15 53 4.66	+42 38 5.30

Comet—B. Z., 418, 60,

		Δα m. s.	Δδ ′ ″
Sid. T.	20 15 41.87	— 2 36.48	— 9 48.34
	Δρ	— .01	— .18
	p	+ .29	+ 1.08

Corr. Chron. — 3 m. 30.37 s.

	α h. m. s.	δ ° ′ ″
(✡ 106) W.	16 59 56.16	+42 16 53.82

Comet—(✡ 106) W.,

		Δα m. s.	Δδ ′ ″
Sid. T.	21 16 40.18	— 1 40.20	— 8 57.94
	Δρ	— .01	— .16
	p	+ .27	+ 1.00

Corr. Chron. — 3 m. 51.83 s.

	α h. m. s.	δ ° ′ ″
(✡ 106) W.	15 59 56.11	+42 16 53.56

Comet—(✡ 106) W.

		Δα m. s.	Δδ ′ ″
Sid. T.	20 12 30.99	+ 0 54.75	—14 32.30
	Δd	— .01	— .26
	p	+ .26	+ .95

(Continued.)

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COMET 1861, II.

DATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT. A	B.	C.	Mean.	MIC.	COMET—STAR. Δ α	Δ mic.
1861.		s.	s.	s.	h. m. s.	w. revs.	m. s.	revs.
Sept. 22	(✡ 106) W. - - -	57.0	11.4	25.8	20 17 11.40	1 40.011	+ 0 54.73	— 56.660
	Comet - - - -	51.9	6.2	20.3	18 6.13	5 36.710		
	(✡ 106) W. - - -	24.4	38.8	53.8	19 39.00	1 39.880	0 53.13	56.872
	Comet - - - -	19.9	34.3	48.2	20 34.13	5 36.791		
	(✡ 106) W. - - -	51.0	5.2	20.0	22 5.40	1 39.702	0 55.40	57.070
	Comet - - - -	46.9	0.6	14.9	23 0.80	5 36.811		
	(✡ 106) W. - - -	12.2	26.9	41.8	24 26.97	1 39.620	0 55.28	56.726
	Comet - - - -	7.8	22.2	36.8	25 22.25	5 36.385		
	(✡ 106) W. - - -	27.9	42.7	57.2	27 42.60	1 39.592	+ 0 55.70	— 56.997
	Comet - - - -	23.9	38.6	52.4	28 38.30	5 36.628		
24	Comet - - - -	9.2	24.4	38.7	20 15 24.10	5 43.660		
	B. Z., 418,76 - -	0.4	15.2	29.4	17 15.00	1 49.139	— 1 50.90	— 54.482
	(✡ 9) - - - - -	38.5	52.8	7.2	18 52.83	1 45.280		
	Comet - - - -	51.4	- -	20.6	21 5.50	5 43.272		
	B. Z., 418,76 - -	41.9	56.8	11.0	22 56.57	1 48.981	1 51.07	54.252
	(✡ 9) - - - - -	19.5	34.2	48.7	24 34.10	1 45.100		
	Comet - - - -	45.4	0.2	14.4	26 0.00	5 43.281		
	B. Z., 418,76 - -	- -	50.5	4.8	27 50.35	1 48.628	1 50.35	54.614
	(✡ 9) - - - - -	13.5	28.2	42.4	29 28.03	1 40.860		
	Comet - - - -	18.9	33.9	48.4	32 33.73	5 43.090		
	B. Z., 418,76 - -	9.4	23.9	38.3	34 23.87	1 48.475	1 50.14	54.576
	(✡ 9) - - - - -	47.0	1.8	16.4	36 1.73	1 44.655		
	Comet - - - -	9.6	24.4	38.9	49 24.30	5 42.385		
	B. Z, 418,76 - -	59.0	13.4	28.2	51 13.53	1 47.810	1 49.23	54.536
	Comet - - - -	46.4	1.2	14.9	55 0.83	5 42.520		
	B. Z., 418,76 - -	34.9	- -	- -	56 49.33	1 47.685	1 48.50	54.796
	Comet - - - -	40.4	55.2	9.4	21 26 55.00	5 41.011		
	B. Z., 418,76 - -	27.7	42.3	56.8	28 42.27	1 45.910	— 1 47.27	— 55.062
25	Comet - - - -	57.5	11.9	26.5	20 19 11.97	5 44.191		
	B. Z, 418,76 - -	- -	41.5	56.0	19 41.62	1 40.218	— 0 29.65	— 63.934
	Comet - - - -	47.2	6.0	25.5	22 6.23	5 44.018		
	B. Z., 418,76 - -	21.0	35.8	50.0	23 35.60	1 40.191	0 29.37	63.788
	Comet - - - -	36.9	55.7	- -	26 55.70	5 43.936		
	B. Z., 418,76 - -	- -	25.0	39.8	27 25.00	1 40.038	0 29.30	63.859
	Comet - - - -	17.4	32.1	46.6	31 32.03	5 43.726		
	B. Z., 418,76 - -	- -	0.8	15.3	32 0.73	1 39.800	0 28.70	63.887
	Comet - - - -	9.6	24.3	38.9	36 24.27	5 43.778		
	B. Z., 418,76 - -	- -	52.9	7.5	36 52.87	1 39.641	0 28.60	64.098
	Comet - - - -	51.5	- -	- -	40 6.20	5 43.271		
	B. Z., 418,76 - -	- -	34.5	48.9	40 34.50	1 39.531	0 28.30	63.701
	Comet - - - -	46.6	1.3	15.4	43 1.10	5 43.391		
	B. Z., 418,76 - -	- -	29.6	44.2	43 29.65	1 39.470	0 28.55	63.882
	Comet - - - -	41.0	55.8	9.9	45 55.57	5 43.340		
	B. Z., 418,76 - -	- -	24.2	38.6	46 24.12	1 39.151	0 28.55	64.150
	Comet - - - -	53.2	7.5	21.6	49 7.43	5 43.161		
	B. Z., 418,76 - -	- -	35.2	50.2	49 35.58	1 39.052	0 28.15	64.070
	Comet - - - -	11.5	26.3	41.0	56 26.27	5 42.801		
	B. Z., 418,76 - -	- -	53.5	8.0	56 53.57	1 38.731	— 0 27.30	— 64.031

RESULTS.

Corr. Chron. — 4 14.11 (m. s.)

	α (h. m. s.)	δ (° ′ ″)
B. Z, 418,76,	16 5 22.13	+42 11 6.95

Comet—B. Z, 418,76,

		Δα (m. s.)	Δδ (′ ″)
Sid. T.	20 36 40.67	— 1 49.64	—13 59.43
	Δρ	— .01	— .26
	p	+ .27	+ 1.09

Corr. Chron. — 4 22.84 (m. s.)

	α (h. m. s.)	δ (° ′ ″)
B. Z, 418,76,	16 5 22.11	+42 11 6.83

Comet—B. Z, 418,76,

		Δα (m. s.)	Δδ (′ ″)
Sid. T.	20 32 37.63	— 0 28.65	—16 22.78
	Δρ	— .01	— .31
	p	+ .26	+ 1.05

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COMET 1861, II.

DATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT. A.	B.	C.	Mean.	MIC.		COMET—STAR. Δ α	Δ mic.
1861.		s.	s.	s.	h. m. s.	w.	revs.	m. s.	revs.
Sept. 28	Comet - - - -	- -	- -	26.5	20 39 12.50	2	35.575		
	B. Z., 418,85 - -	- -	0.2	14.2	41 0.20	4	40.800	— 1 47.70	+ 31.118
	Comet - - - -	26.2	40.9	55.2	45 40.77	2	35.228		
	B. Z., 418,85 - -	14.2	28.3	43.0	47 28.50	4	40.125	1 47.73	30.790
	Comet - - - -	29.5	43.9	57.9	54 43 77	2	34.892		
	B. Z., 418,85 - -	17.1	31.7	45.9	56 31.57	4	39.778	1 47.80	30.779
	Comet - - - -	24.6	38.9	53.1	59 38.87	2	34.828		
	B. Z., 418,85 - -	- -	26.8	40.8	21 1 26.67	4	39.631	— 1 47.80	+ 30.696
30	B. Z., 418,85 - -	49.9	4.8	19.0	20 36 4.56	4	48.885	+ 0 57.10	+ 17.363
	Comet - - - -	- -	2.0	16.0	37 1.67	3	44.556		
	B. Z., 418,89 - -	57.8	12.6	27.3	38 12.57	3	38.739	— 1 10.90	— 5.817
	B. Z., 418,85 - -	48.6	2.9	17.4	42 2.97	4	48.673	+ 0 57.60	+ 17.537
	Comet - - - -	- -	- -	15.0	43 0.57	3	44.170		
	B. Z., 418,89 - -	- -	10.8	25.4	44 10.92	3	38.432	— 1 10.35	— 5.738
	B. Z., 418,85 - -	2.7	17.5	31.8	49 17.33	4	48.328	+ 0 58.37	+ 16.947
	Comet - - - -	1.2	15.8	30.1	50 15.70	3	44.415		
	B. Z., 418,89 - -	11.2	26.0	40.2	51 25.80	3	38.130	— 1 10.10	— 6.285
	B. Z., 418,85 - -	56.2	10.8	25.2	54 10.75	4	48.112	+ 0 58.57	+ 16.945
	Comet - - - -	54.8	9.4	23.7	55 9.30	3	44.201		
	B. Z., 418,89 - -	4.8	19.3	33.9	56 19.33	3	38.044	— 1 10.03	— 6.157
	B. Z., 418,85 - -	55.7	10.8	25.2	59 10.47	4	48.029	+ 0 58.96	+ 16.993
	Comet - - - -	54.8	9.4	23.7	21 0 9.43	3	44.070		
	B. Z., 418,89 - -	4.8	19.3	33.9	1 18.80	3	37.752	— 1 9.37	— 6.318
	B. Z., 418,85 - -	56.3	11.2	25.4	6 10.97	4	47.682	+ 0 59.40	+ 17.098
	Comet - - - -	56.1	10.6	24.4	7 10.37	3	43.618		
	B. Z., 418,89 - -	4.8	19.2	33.8	8 19.27	3	37.272	— 1 8.90	— 6.346
	B. Z., 418,85 - -	1.7	15.0	29.4	11 15.37	4	47.641	+ 0 59.13	+ 17.132
	Comet - - - -	59.8	14.5	29.2	12 14.50	3	43.543		
	B. Z., 418,89 - -	9.0	23.2	37.8	13 23.33	3	37.124	— 1 8.83	— 6.419
Oct. 3	Comet - - - -	52.1	6.4	20.8	20 45 6.43	4	32.838		
	29874, Lalande - -	39.2	54.0	9.0	45 54.07	2	36.511	— 0 47.64	— 22.220
	Comet - - - -	20.2	34.9	49.4	49 34.83	4	32.538		
	29874, Lalande - -	8.0	22.4	37.2	50 22.53	2	36.162	0 47.70	22.269
	Comet - - - -	4.0	18.2	32.4	53 18.20	4	32.678		
	29874, Lalande - -	51.2	5.6	20.0	54 5.60	2	36.270	0 47.40	22.301
	Comet - - - -	35.1	49.0	3.4	56 49.17	4	32.482		
	29874, Lalande - -	21.2	35.6	50.6	57 35.80	2	35.860	0 46.63	22.515
	Comet - - - -	0.1	14.7	28.8	21 2 14.53	4	34.328		
	29874, Lalande - -	46.5	1.4	15.7	3 1.20	2	35.530	— 0 46.67	— 22.691
8	(✡ 9) - - - - -	33.4	48.6	3.9	21 20 48.63	4	42.978		
	Comet - - - -	6.2	21.1	34.9	21 20.73	4	36.081		
	B. Z., 418,104 - -	- -	41.2	55.4	21 41.03	1	37.072	— 0 20.30	— 41.904
	(✡ 9) - - - - -	46.2	0.8	15.2	25 0.73	4	42.701		
	Comet - - - -	19.4	33.8	47.6	25 33.60	4	35.943		
	B. Z., 418,104 - -	- -	53.6	7.8	25 53.60	1	36.760	0 20.00	42.078
	(✡ 9) - - - - -	26.9	41.9	55.8	29 41.53	4	42.492		
	Comet - - - -	0.8	14.9	28.9	30 14.87	4	35.469		
	B. Z., 418,104 - -	- -	34.4	48.7	30 34.52	1	36.498	— 0 19.65	— 41.866

RESULTS.

Sept. 28 — Corr. Chron. — 4 m. s. 49.24

	α h. m. s.	δ ° ′ ″
B. Z., 418,86,	16 10 47.62	+41 40 11.14

Comet—B. Z, 418,86,

		Δα m. s.	Δδ ′ ″
Sid. T.	20 44 59.74	— 1 47.76	+ 7 54.09
	Δρ	+ .01	.15
	p	+ .26	+ 1.10

30 — Corr. Chron. — 5 m. s. 16.50

	α h. m. s.	δ ° ′ ″
B. Z, 418,85,	16 10 47.58	+41 40 10.80
B. Z, 418,89,	16 12 56.03	+41 46 11.01

Comet—B. Z., 418,85,

		Δα m. s.	Δδ ′ ″
Sid. T.	20 49 43.72	+ 0 58.45	+ 4 23.51
	Δρ	.00	.08
	p	+ .25	+ 1.11

Comet—B. Z., 418,89.

Sid. T.	20 49 43.72	— 1 9.78	— 1 34.60
	Δρ	.00	— .03
	p	+ .25	+ .98

Oct. 3 — Corr. Chron. — 5 m. s. 46.18

	α h. m. s.	δ ° ′ ″
29874, Lalande,	16 16 46.35	+41 45 50.56

Comet—29874, Lalande,

		Δα m. s.	Δδ ′ ″
Sid. T.	20 47 38.45	— 0 47.21	— 5 44.26
	Δρ	.00	— .11
	p	+ .25	+ 1.41

(Continued.)

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COMET 1861, II.

DATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT. A.	B.	C.	Mean.	MIC.	COMET—STAR. Δ α	Δ mic.
1861.		s.	s.	s.	h. m. s.	w. revs.	m. s.	revs.
Oct. 8	(✡ 9) - - - -	4.8	19.6	33.8	21 34 19.40	4 42.231		
	Comet - - - -	38.8	53.0	6.9	34 52.90	4 34.975		
	B. Z, 418, 104 - -	- -	12.2	27.1	35 12.60	1 36.181	— 0 19.70	— 41.689
	(✡ 9) - - - -	40.6	55.2	9.1	37 54.97	4 41.901		
	Comet - - - -	13.9	28.6	42.8	38 28.43	4 35.081		
	B. Z., 418, 104 - -	- -	48.0	2.4	38 47.93	1 36.021	0 19.50	41.955
	(✡ 9) - - - -	57.9	12.6	26.8	42 12.43	4 41.855		
	Comet - - - -	32.0	46.6	0.7	42 46.43	4 34.585		
	B. Z., 418, 104 - -	- -	5.3	19.8	43 5.33	1 35.871	— 0 18.90	— 41.609
12	Comet - - - -	33.2	47.8	2.3	21 51 47.77	3 43.602		
	(✡ 107) W. - - -	30.6	44.8	59.6	54 45.00	1 48.248	— 2 57.23	— 25.215
	Comet - - - -	28.0	42.2	56.9	56 42.37	3 42.545		
	(✡ 107) W. - - -	24.7	39.4	53.6	59 39.23	1 47.719	2 56.86	24.687
	Comet - - - -	35.4	50.2	3.7	22 8 49.77	3 41.780		
	(✡ 107) W. - - -	32.0	46.6	1.0	11 46.53	1 47.082	— 2 56.76	— 24.559
14	Comet - - - -	55.6	8.4	23.0	22 12 9.00	4 46.068		
	(✡ 107) W. - - -	57.5	11.8	25.7	12 11.67	2 47.211	— 0 2.67	— 24.750
	Comet - - - -	11.6	25.6	40.3	14 25.83	4 45.842		
	(✡ 107) W. - - -	13.2	27.9	42.0	14 27.70	2 47.082	0 1.87	24.653
	Comet - - - -	5.2	18.4	32.9	17 18.83	4 45.055		
	(✡ 107) W. - - -	6.4	21.0	34.9	17 20.77	2 46.985	0 1.94	23.963
	Comet - - - -	45.2	59.6	13.6	19 59.47	4 45.041		
	(✡ 107) W. - - -	47.2	1.2	14.9	20 1.10	2 46.863	0 1.63	24.071
	Comet - - - -	9.6	23.7	37.4	22 23.57	4 44.805		
	(✡ 107) W. - - -	11.1	25.4	39.2	22 25.23	2 46.750	— 0 1.66	— 23.948

RESULTS.

Oct. 8

Corr. Chron. — 6 m. 18.41 s.

	α h. m. s.	δ ° ′ ″
B. Z., 418, 104,	16 23 30.29	+41 45 52.24

Comet—B. Z., 418, 104.

		Δα m. s.	Δδ ′ ″
Sid. T.	21 25 54.42	— 0 19.68	—10 43.22
Δρ		— .01	— .25
p		+ .25	+ 1.25

12

Corr. Chron. — 6 m. 57.71 s.

	α h. m. s.	δ ° ′ ″
(✡ 107) W.	16 32 4.99	+41 40 11.15

Comet—(✡ 107) W.

		Δα m. s.	Δδ ′ ″
Sid. T.	21 52 8.93	— 2 56.95	— 6 21.47
Δρ		— .00	— .16
p		+ .25	+ 1.38

14

Corr. Chron. — 7 m. 18.99 s.

	α h. m. s.	δ ° ′ ″
(✡ 107) W.	16 32 4.95	+41 40 10.95

Comet—(✡ 107) W.

		Δα m. s.	Δδ ′ ″
Sid. T.	22 9 56.35	— 0 1.95	— 6 13.13
Δρ		— .00	— .17
p		+ .25	+ 1.50

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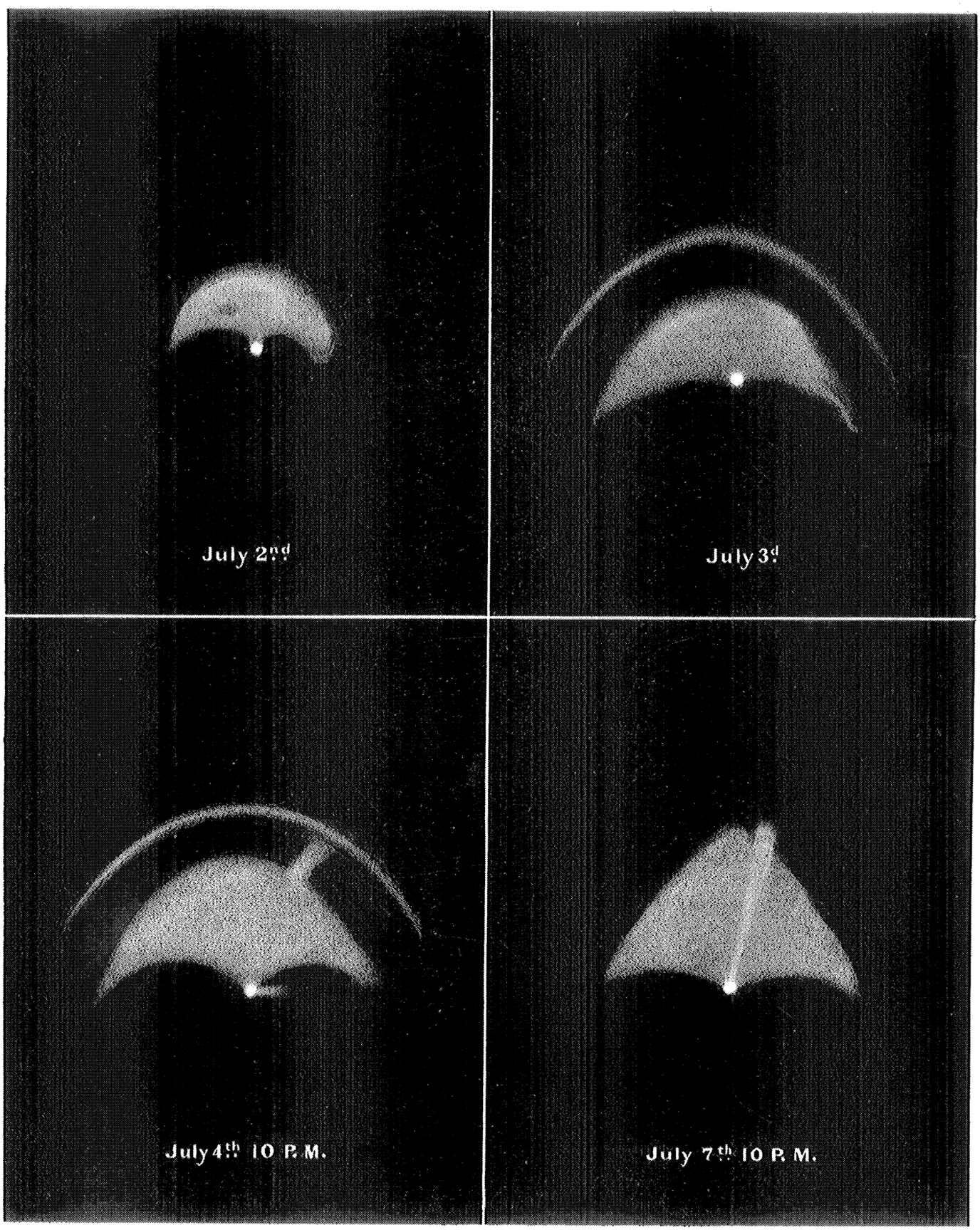

Bowen & Co lith Phila.

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PHYSICAL ASPECTS OF THE COMET 1861, II.

(WITH A PLATE.)

The comet was first noticed on the evening of the 30th of June at 10½ o'clock. At that time a bank of clouds obscured the nucleus, and its lengthened coma of pulsating light extending towards the zenith caused it to be mistaken for an auroral beam. This opinion of its nature was apparently confirmed by a number of luminous and vapory flocculi lying eastward of the meridian, and near the prime vertical. The following evening at about the same hour, or a little later, it was again remarked, and under somewhat similar circumstances; but whilst the change of place was evident, there was no reason to suspect it a celestial body. At a later hour its character was no longer doubtful.

On the night of the 2d of July, the nucleus of the comet was near the small star 6 Ursæ Majoris, from which point the tail proceeded in two branches. The first one slightly curving towards the star α Ursæ Majoris, was only 8°, or at most 10°, in length. The other, eastern or main branch, was straight and narrow, and passed in nearly a vertical direction closely parallel with the stars λ and κ Draconis, near the latter of which it was the most attenuated, and not more than 1½° in width. Thence, spreading gradually, it could be followed by the eye to a point in the neighborhood of 68 and 72 Herculis, or to a distance of some 80° or 85° from the nucleus. During the night it seemed to move slowly westward, finally enveloping the two stars of Draco mentioned above.

Its light was neither uniform nor constant. For the first 8° or 10° from the nucleus the tail was remarkably brilliant, and then its light rapidly diminished in intensity until reaching its narrowest point, beyond which the gradation was almost insensible. The constancy of the light near the nucleus was interrupted at intervals by flashings or pulsations, closely resembling those of the aurora, and at these times it was remarked that the upper portion of the tail was perceptibly fainter, though this may have been simply the optical effect of contrast.

When viewed with a telescope of low power, the nucleus appeared as a small planetary disc of only a few seconds diameter. From this there emanated towards the sun a luminous sector, or fan-shaped head, terminated by a well-defined convex line. The matter proceeding from the nucleus toward the sun and forming the head, was at this line sharply repelled, and falling back on either side, formed the branches of the tail. The whole appearance of this sector, at first brilliant and well-defined, underwent various modifications as the night progressed. When first observed, it was nearly symmetrical with respect to the comet's axis. The eastern wing was perhaps a little the longer of the two. There was a dark oval spot near the middle of the fan and a little to the east of the axis: then a faint curved line or lines, concentric with the outer convex boundary, divided the mass into upper and lower strata, each with a cusp on either side. Afterwards the lines appeared broken, giving a mottled appearance to the central zone of the sector, and finally the western cusps seemed to break, and the fan-shape was transformed into a spiral whose centre was in the nucleus. Meanwhile, during the hours of observation, the dimensions of the whole mass had increased to at least double of the original size, while the outlines had become so indistinct that it was only with difficulty the general shape could be recognized.

JULY 3.—The nucleus was distinctly visible to the unassisted eye as early as 8 p. m., and as late as 4*h*. 10*m*. on the following morning. It might have been seen at even a later hour.

In the field of the telescope used last night, (the comet seeker,) by 9 o'clock it was a brilliant stellar point just north of 35 Ursæ Majoris. In the equatorial it was enlarged to 11″.2, and was evidently elongated in a line perpendicular to the direction of its motion.

The luminous sector, or fan-shaped head preceding it had greatly changed. Four measurements placed its outer boundary line at 101″ from the nucleus. This line was parabolic rather than elliptical, but there was in its western half an irregularity as though a segment had been cut from that wing. In the early part of the evening, the posterior boundary was curved on each wing of the sector, its eastern half terminating in a sharp cusp, whilst the western one was not only irregular, as has been said, but its extremity was not as well defined, and the volume of that half was sensibly less. That boundary had notably flattened by 11*h*. 45*m*.

The surface of the sector was much less mottled than during the night of the 2d, and was at no time so vivid as then. The dark oval spot could not be recognized. Beyond the sector there was a dark space, and concentric with and at the distance of 396″ (measured by Mr. Ferguson) from the nucleus, a faint outer envelope was traceable. This last was a narrow band of dusky white hue, densest directly in front of the nucleus, at which point it was 12″ or 14″ broad, and from thence diminished towards the extremities of the wings both in volume and luminosity until its form was that of a slender crescent.

The coma continued much as last night, and requires comment under two heads. The lower, or main portion, extending from the nucleus to half way between κ and λ Draconis, was markedly the brighter, and the upper part of it slightly turned to the westward. Its eastern edge, bordering close on κ, and passing to the left of λ, was best defined; its western more fringe-like and spreading from the axis. It was not, at any time, as brilliant as during last night, nor was the dark central line near the axis as marked, but was, as then, subject to fitful pulsations, at which periods the increase of light sometimes seemed wholly confined to within 12° or 14° of the nucleus, at others to flash to the utmost extremity of the coma almost instantly, and again at others, the whole volume appeared to be bent to the westward as a willow branch by the wind. The most remarkable of these pulsations occurred at 10*h*. 50*m*., during which the coma became extremely faint between κ and α Draconis, though it continued quite distinct above the latter star. Its greatest breadth did not exceed 4°.

α Draconis was near the axis of the longer and narrower portion. This was nowhere more than 1½° broad; was always faintest between κ and α Draconis, above which it was brighter, and could be followed in its gradually diminishing lustre to the eastward of α Ophiuchi, where it was lost in the light of the milky way.

JULY 4.—The gazing observations of this night continued from 7*h*. 50*m*. until 11*h*. 30*m*., p. m.

At 7*h*. 55*m*. the cometary nature of the body was readily distinguishable, and the light of the nucleus had become visible before that of α Ursæ Majoris. When seen at a later hour it was more condensed than last night, and appeared in the comet seeker as a brilliant elongated star.

At 10*h*. 50*m*. the general form of the sector-shaped head preceding the nucleus was parabolic. It was less distinctly marked than during the last night. Its greatest extent from the nucleus by a mean of five measures in the direction of the axis of the comet was 140″, and in a line perpendicular thereto—the extremity of the east wing—about one-third greater, or 180″. The outline of the western half

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was broken as it was last night, and the surface of that wing was much mottled. 10° or 12° to the westward of the axis, and forming an angle of 45° with it, there emanated a narrow brush of light which was traceable in the field of the equatorial for 30″. The posterior edge of the sector was again curved as on the night of the 2d, that of the eastern half being an unbroken line, whilst the western one was quite irregular. Moreover, there was a fan-shaped bundle of rays to the latter, which shot from the nucleus to a distance of 18″ or 20″ in a line perpendicular to the axis of the sector.

The outer envelope so well seen on the night of the 3d could not be traced in the equatorial, and was perceptible in the field of the comet seeker only at intervals and by indirect vision. It preserved its slender crescent outline and was concentric with the sector, but separated from it by a dark space of about 70″.

At 9*h*. 7*m*. the coma was plainly divisible into two branches of which the bifurcation was just above κ Draconis. The angle at which the western branch curved from the longer one was from 3° to 4°. The great volume of the light was of a delicate cream color, and was within 8° of the nucleus, from which it gradually diminished in brilliancy. The eastern edge was the best defined, but neither of them was sharp, and the western one was more brushy, and curved outwardly more than heretofore. Above the point of separation of the two branches, the western one spread into quite a broad fan shape, whose outer borders rapidly diminished in light as far as the line joining α Draconis and ζ Ursæ Majoris; and except during the occasional pulsations, it wholly faded from sight within five degrees upward from that line. During these periods, the curve could be traced to the cluster of stars near θ Bootis. The great bend of the curve was on or near the line joining δ Ursæ Majoris and κ Draconis. A dark space intervened between its eastern line and the eastern branch of the coma. α and ι Draconis and τ, σ, μ, and ε Herculis were all within that branch. This nowhere above α Draconis exceeded 1½° in breadth. It gradually diminished and again increased in brightness between the last named star and ι of the same constellation, and could be followed to the scattered light of the milky way east of α Ophiuchi. The periodical fluctuations in its brightness were not so remarkable as on either of the other evenings.

JULY 6.—Clouds broke away and the comet was found with the unassisted eye at 8*h*. 15*m*.; it was obscured with occasional interruptions by clouds until 10*h*., when the sky became hopelessly overcast.

The comet was much fainter to-night. The tail was not more than 25° in length, and curved very nearly the same as on previous nights, but was broader, being nowhere less than 3° in width. The western and the main branches seemed both subdivided continuously.

The luminosity surrounding the head was more extended than before, but with no perceptible outline.

The sector was much smaller and fainter, and for the greater part of the time could scarcely be discerned at all as distinct from the general mass of light. The vertex of its upper, convex side was some 5° or 10° to the right of the comet's axis, corresponding very nearly to the position of the line or brush of light seen on the 3d instant. The inner edge of the eastern cusp was better defined than that of the western,—it was concave as usual, while the western, when it could be seen at all, was quite straight. There was no trace whatever of any dark spots or lines, except that by occasional glimpses a shade could be suspected separating the outer luminosity from the sector, but even this was very doubtful.

JULY 7.—Although there were thin cirri extending over all that portion of the sky, the cometary nature of the body was recognizable as early as 8*h*. 5*m*. An hour later the thin clouds had all disappeared.

At 10*h*. p. m. the light of the nucleus was brighter than that of ε Ursæ Majoris. With a power of 70, and the full aperture of the equatorial, it was, in comparison with the night of the 5th, condensed and brilliant, but not stellar.

The head, or what has hitherto been called the sector, was not unlike an arrow head in form.

The anterior boundary of the sector was more flattened than on previous evenings, and was not unlike an arrow head greatly expanded perpendicular to the axis of length. A brush of luminous fibres extended from the nucleus across it, inclined to the west at an angle of 8° or 10°, and perceptible 20′ beyond the boundary. That wing was the smaller, and much the less regular in outline. The curve of the posterior boundary also was more flattened, but neither of them was well defined, although the night had become perfectly clear.

The western branch of the coma could be traced from the nucleus to near θ Bootis, the eastern one to about a degree beyond υ and φ Herculis, and the latter stars were precisely in its line. At 8° from the nucleus the two were not more than 1½° to 2° broad. The great volume of light was within 10° of the nucleus, and at 20° the brilliancy of the coma did not exceed that of the milky way, west of γ Aquilæ. But its intensity was subject to great changes, when it seemed to flow from the nucleus in a stream steadily increasing for some minutes, and again as slowly fading away. At these times the dark space between the two branches of the coma become more distinct, and the optical illusion of a curve in the line of the axis more apparent. The most noteworthy of these changes was just at 11 o'clock, shortly after which hour the observations ceased.

JULY 8.—The nucleus was more planetary than during last evening, and was approximately of the same degree of brightness, or produced the same effect upon the eye as ζ Ursæ Majoris. It became visible soon after 8*h*. p. m.

In the equatorial, and with power 70 as used then, the sector head was much more distinct, and its anterior boundary quite circular. The posterior line was a caustic, of which the nucleus occupied one of the cusps. The eastern cusp was sharp, whilst the western continued as irregular as on previous evenings.

The marked brush or rays of light diverging from the nucleus extended across the general mottled surface of the sector at the angle observed last night.

The coma continued in two distinct branches, of which the western one was curved, and constantly traceable to within a degree of θ Bootis. During the pulsations it could be seen a degree or two beyond that point. Its western outline was markedly brushy from the nucleus to extreme visibility. The eastern branch extended to and covered υ and φ Herculis. The great volume of light was within 8° of the nucleus, and its eastern line was the sharpest. Above the point mentioned, the coma diminished in brightness uniformly, until it was no longer distinguishable beyond φ Herculis. As heretofore the dark space between the two branches was most notable during the outward emissions of light from the nucleus through them.

Prof. Hubbard obtained by the Gaussian method the following hyperbolic elements, based upon the places obtained by Mr. Ferguson on the 2d, 8th, and 17th of July. They give for the middle date the values $\Delta l = -0''.33$, $\Delta b = -0''.16$.

Time of perihelion passage, 1861, June 11, .85294. Wash. M. T.

Long. of perihelion,	249° 44′ 44″.58	M. equinox, 1861.0.
Long. of node,	278 59 49 .72	
Inclination,	85 56 8 .86.	
Excentricity,	1.0265470.	
Perihelion distance,	0.7453901.	

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VIRGINIA.

DATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT. A.	B.	C.	Mean.	MIC.	PLANET—STAR. Δ α	Δ mic.
1861.		s.	s.	s.	h. m. s.	w. revs.	m. s.	revs.
July 25	A. C., 20322	31. 6	42. 9	54. 0	18 15 42. 83	2 37. 795		
	A. C., 20337	40. 8	51. 7	2. 9	16 51. 80	1 33. 860	+ 1 1. 00	— 67. 642
	A. C., 20339	48. 8	59. 8	10. 9	16 59. 83	1 38. 270		
	Virginia	41. 5	52. 7	4. 2	17 52. 80	5 41. 541		
	A. C., 20337	35. 9	47. 0	57. 8	19 46. 90	1 34. 310	1 1. 17	67. 742
	Virginia	36. 8	48. 2	59. 2	20 48. 07	5 42. 091		
	A. C., 20337	34. 9	45. 8	56. 9	22 45. 87	1 34. 500	1 0. 83	67. 483
	Virginia	35. 4	46. 8	57. 9	23 46. 70	5 42. 022		
	A. C., 20337	9. 0	20. 1	31. 1	25 20. 07	1 34. 369	1 0. 66	67. 962
	Virginia	9. 6	20. 8	31. 8	26 20. 73	5 42. 370		
	A. C., 20337	15. 0	26. 0	37. 0	28 26. 00	1 34. 732	1 0. 50	67. 885
	Virginia	15. 0	26. 7	37. 8	29 26. 50	5 42. 656		
	A. C., 20337	41. 4	52. 8	3. 8	30 52. 67	1 35. 000	1 0. 60	67. 791
	Virginia	42 1	53. 3	4. 4	31 53. 27	5 42 830		
	A. C., 20337	44. 1	55. 2	6. 3	33 55. 20	1 35. 065	1 0. 40	67. 916
	Virginia	44. 6	55. 7	6. 5	34 55. 60	5 43. 020		
	A. C., 20337	47. 7	58. 8	9. 9	36 58. 80	1 35. 311	+ 1 0. 20	— 67. 780
	Virginia	47. 7	59. 1	10. 2	37 59. 00	5 43. 130		
Aug. 1	A. C., 20217	25. 9	37. 6	49. 0	18 7 37. 50	5 39. 660	+ 3 52. 70	+ 61. 670
	(✱ 9)	14. 7	26. 0	37. 2	11 25. 97	2 32. 586		
	Virginia	18. 8	30. 4	41. 4	11 30. 20	1 37. 951		
	A. C., 20217	19. 9	31. 3	42. 2	13 31. 13	5 40. 009	3 52. 50	61. 614
	Virginia	12. 6	23. 6	34. 7	17 23. 63	1 38. 356		
	A. C., 20217	39. 8	51. 2	2. 3	18 51. 10	5 40. 300	3 52. 27	61. 590
	Virginia	32. 0	43. 6	54. 5	22 43. 37	1 38. 671		
	A. C., 20217	56. 4	7. 9	19. 2	24 7. 83	5 40. 602	3 51. 84	61. 471
	Virginia	48. 2	59. 8	11. 0	27 59. 67	1 39. 092		
	A. C., 20217	4. 9	16. 3	27. 6	29 16. 27	5 40. 848	3 51. 73	61. 347
	Virginia	56. 8	8. 0	19. 2	33 8. 00	1 39. 462		
	A. C., 20217	25. 2	36. 8	48. 0	34 36. 67	5 41. 181	3 51. 00	61. 401
	Virginia	- -	- -	39. 0	38 27. 67	1 39. 741		
	A. C., 20217	1. 2	12. 8	23. 8	40 12. 60	5 41. 321	3 51. 27	61. 309
	Virginia	52. 5	3. 9	15. 2	44 3. 87	1 39. 973		
	A. C., 20217	6. 0	17. 5	28. 7	45 17. 40	5 41. 512	3 51. 43	61. 345
	Virginia	57. 6	9. 0	19. 9	49 8. 83	1 40. 128		
	A. C., 20217	8. 4	20. 3	31. 3	50 20. 00	5 41. 720	3 50. 35	61. 322
	Virginia	- -	10. 6	21. 7	54 10. 35	1 40. 359		
	A. C., 20217	33. 9	45. 4	56. 8	55 45. 37	5 41. 758	+ 3 50. 43	+ 61. 362
	(✱ 9)	22. 2	33. 6	44. 8	59 33. 53			
	Virginia	24. 6	35. 9	46. 9	59 35. 80	1 40. 357		
2	A. C., 20217	35. 0	46. 8	57. 7	17 39 46. 50	5 39. 640	+ 2 59. 97	+ 46. 463
	Virginia	35. 0	46. 8	57. 6	42 46. 47	2 36. 135		
	A. C., 20217	54. 4	6. 0	17. 0	45 5. 80	5 40. 077	2 59. 60	46. 375
	Virginia	54. 2	5. 4	- -	48 5. 40	2 36. 660		
	A. C., 20217	59. 3	- -	22. 9	49 10. 60	5 40. 243	2 59. 63	46. 297
	Virginia	0. 0	11. 5	22. 3	52 10. 23	2 36. 904		
	A. C., 20217	36. 0	47. 3	58. 5	55 47. 27	5 39. 142	+ 2 59. 33	+ 46. 212
	Virginia	35. 2	46. 7	57. 9	58 46. 60	2 35. 888		

RESULTS.

m. s.
Corr. Chron. — 3 30. 26

	α h. m. s.	δ ° ′ ″
A. C., 20337,	20 6 48. 29	—15 45 1. 35

Virginia—A. C., 20337,

		Δα m. s.	Δδ ′ ″
Sid. T.	18 24 22. 53	+ 1 0. 67	—17 21. 67
	Δρ	+ . 02	— 1. 00
	p	— . 17	+ 5. 73

m. s.
Corr. Chron. — 4 5. 00

	α h. m. s.	δ ° ′ ″
A. C., 20217,	19 57 31. 88	—16 45 46. 82

Virginia—A. C., 20217,

		Δα m. s.	Δδ ′ ″
Sid. T.	18 31 44. 14	+ 3 51. 55	+15 44. 33
	Δρ	+ . 02	. 91
	p	— . 15	+ 5. 89

(Continued.)

VIRGINIA.

DATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT. A.	B.	C.	Mean.	MIC.	PLANET—STAR. Δ α	Δ mic.
1861.		s.	s.	s.	h. m. s.	w. revs.	m. s.	revs.
Aug. 2	A. C., 20217	40.1	51.6	2.8	17 59 51.50	5 39.432	+ 2 59.27	+ 46.192
	Virginia	39.6	50.7	2.0	18 2 50.77	2 36.198		
	A. C., 20217	42.0	53.4	- -	3 53.42	5 39.701	2 58.95	46.257
	Virginia	40.9	52.4	3.8	6 52.37	2 36.402		
	A. C., 20217	30.1	41.2	52.9	9 41.33	5 40.015	2 59.17	46.098
	Virginia	29.3	40.4	51.8	12 40.50	2 36.875		
	A. C., 20217	26.9	47.2	59.4	13 47.83	5 40.280	2 59.17	45.946
	Virginia	35.9	46.9	58.2	16 47.00	2 37.292		
	A. C., 20217	58.4	9.8	21.3	18 9.83	5 40.509	2 58.34	45.914
	Virginia	57.0	8.1	19.4	21 8.17	2 37.553		
	A. C., 20217	51.2	- -	13.8	25 2.50	5 40.929	2 58.23	45.969
	Virginia	49.7	0.8	11.7	28 0.73	2 37.918		
	A. C., 20217	54.8	6.2	17.4	30 6.13	5 41.132	2 57.77	45.944
	Virginia	52.8	3.9	15.0	33 3.90	2 38.146		
	A. C., 20217	30.5	42.0	53.2	35 41.90	5 41.418	2 57.87	45.744
	Virginia	28.6	39.7	51.0	38 39.77	2 38.632		
	A. C., 20217	36.2	47.9	59.0	39 47.70	5 41.579	2 57.67	45.729
	Virginia	34.1	45.6	56.4	42 45.37	2 38.808		
	A. C., 20217	47.2	58.6	9.7	43 58.50	5 41.845	+ 2 57.53	+ 45.814
	Virginia	44.8	55.9	7.4	46 56.03	2 38.989		
3	A. C., 20217	28.1	39.5	50.5	18 22 39.37	3 44.592	+ 2 5.00	+ 30.528
	Virginia	33.1	44.4	55.6	24 44.37	1 43.925		
	A. C., 20217	31.6	43.0	54.2	41 42.93	3 45.802	2 4.54	29.963
	Virginia	36.2	47.6	58.6	43 47.47	1 45.700		
	A. C., 20217	32.3	43.6	55.0	45 43.63	3 45.861	2 4.34	29.981
	Virginia	36.8	47.9	59.2	47 47.97	1 45.741		
	A. C., 20217	38.2	49.3	0.8	48 49.43	3 46.272	2 4.40	30.013
	Virginia	42.8	53.8	4.9	50 53.83	1 46.120		
	A. C., 20217	13.4	24.8	36.0	54 24.73	3 46.285	2 4.00	29.987
	Virginia	- -	28.8	40.0	56 28.73	1 46.159		
	A. C., 20217	16.2	27.8	39.0	58 27.67	3 46.772	2 3.76	29.853
	Virginia	20.2	31.6	42.5	19 0 31.43	1 46.780		
	A. C., 20217	36.8	47.2	59.3	1 47.77	3 46.942	2 3.83	28.903
	Virginia	40.3	51.8	2.7	3 51.60	1 46.900		
	A. C., 20217	26.9	38.0	49.3	6 38.07	3 47.049	2 3.50	29.629
	Virginia	30.3	41.6	52.8	8 41.57	1 47.281		
	A. C., 20217	36.9	48.2	59.3	9 48.13	3 47.171	2 3.44	29.657
	Virginia	40.2	51.6	2.9	11 51.57	1 47.375		
	A. C., 20217	39.3	50.6	1.9	12 50.57	3 47.350	2 2.93	29.861
	Virginia	42.6	52.9	5.0	14 53.50	1 47.350		
	A. C., 20217	59.7	11.0	22.3	16 11.00	3 47.345	+ 2 3.00	+ 29.592
	Virginia	- -	- -	25.3	18 14.00	1 47.614		
4	A. C., 20217	41.8	53.3	4.3	18 26 53.13	3 46.590	+ 1 12.30	+ 14.442
	Virginia	54.2	5.6	16.5	28 5.43	2 45.006		
	A. C., 20217	51.2	2.6	13.8	29 2.53	3 46.498	+ 1 12.50	+ 14.361
	Virginia	3.7	15.2	26.2	30 15.03	2 44.995		

RESULTS.

Corr. Chron. — 4 m. 8 s. 8.92

	α h. m. s.	δ ° ′ ″
A. C., 20217,	19 57 31.89	—16 45 47.01

Virginia—A. C., 20217,

	h. m. s.	Δα m. s.	Δδ ′ ″
Sid. T.	18 10 57.75	+ 2 58.75	+11 48.04
		Δρ — .02	.73
		p — .19	+ 5.79

Corr. Chron. — 4 m. 13 s. 02

	α h. m. s.	δ ° ′ ″
A. C, 20217,	19 57 31.90	—16 45 47.16

Virginia—A. C., 20217,

	h. m. s.	Δα m. s.	Δδ ′ ″
Sid. T.	18 54 7.53	+ 2 3.88	+ 7 39.64
		Δρ — .01	.42
		p — .11	+ 5.96

(Continued.)

VIRGINIA.

DATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT. A.	B.	C.	Mean.	MIC.	PLANET—STAR. Δ α	Δ mic.
1861.		s.	s.	s.	h. m. s.	w. revs.	m. s.	revs.
Aug. 4	A. C., 20217	4.9	16.5	27.8	18 31 16.40	3 46.772	+ 1 12.43	+ 14.585
	Virginia	17.4	28.9	40.2	32 28.83	2 45.045		
	A. C., 20217	5.6	16.8	27.8	34 16.73	3 46.990	1 11.97	14.478
	Virginia	17.3	28.8	40.0	35 28.70	2 45.370		
	A. C., 20217	14.1	25.5	36.4	36 25.33	3 47.069	1 12.17	14.397
	Virginia	26.2	37.6	48.7	37 37.50	2 45.530		
	A. C., 20217	27.4	38.8	49.9	38 38.70	3 47.201	1 12.17	14.357
	Virginia	39.9	50.8	1.9	39 50.87	2 45.702		
	A. C., 20217	35.9	47.1	58.6	40 47.20	3 47.285	1 11.77	14.208
	Virginia	47.8	58.9	10.2	41 58.97	2 45.935		
	A. C., 20217	4.3	15.6	26.5	44 15.47	3 47.269	1 11.80	14.157
	Virginia	16.0	27.4	38.4	45 27.27	2 45.970		
	A. C., 20217	13.6	24.9	36.2	46 24.90	3 47.437	1 11.77	14.245
	Virginia	25.4	36.7	47.9	47 36.67	2 46.050		
	A. C., 20217	32.4	43.9	54.9	48 43.73	3 47.625	1 11.67	14.185
	Virginia	44.1	55.6	6.5	49 55.40	2 46.298		
	A. C., 20217	40.8	52.2	3.4	51 52.13	3 47.740	1 11.44	14.263
	Virginia	52.3	3.6	14.8	53 3.57	2 46.335		
	A. C., 20217	47.8	58.9	10.2	53 58.97	3 47.785	+ 1 11.40	+ 14.051
	Virginia	59.2	10.4	21.5	55 10.37	2 46.592		
6	Virginia	35.2	47.0	57.8	18 23 46.67	4 47.301		
	A. C., 20217	5.4	16.7	27.8	24 16.63	3 43.561	— 0 29.96	— 16.774
	Virginia	- -	46.9	57.7	27 46.72	4 47.575		
	A. C., 20217	5.8	16.9	28.2	28 16.97	3 43.811	0 30.25	16.798
	Virginia	20.4	31.7	42.9	32 31.67	4 47.935		
	A. C., 20217	50.6	2.0	13.4	33 2.00	3 44.240	0 30.33	16.729
	Virginia	23.2	34.6	45.4	36 34.40	4 48.350		
	A. C., 20217	53.5	5.0	16.2	37 4.90	3 44.325	0 30.50	17.059
	Virginia	25.8	37.4	48.5	38 37.23	4 48.392		
	A. C., 20217	56.4	7.6	19.0	39 7.67	3 44.502	0 30.44	16.924
	Virginia	40.2	51.2	2.6	40 51.33	4 48.301		
	A. C., 20217	10.8	21.9	33.2	41 21.97	3 44.790	0 30.64	16.545
	Virginia	3.8	15.2	26.2	44 15.07	4 48.791		
	A. C., 20217	34.6	46.0	57.0	44 45.87	3 44.655	0 30.80	17.170
	Virginia	11.9	22.9	34.3	44 23.03	4 48.500		
	A. C., 20217	42.4	53.9	5.0	46 53.77	3 44.464	0 30.74	17.070
	Virginia	33.2	45.0	55.8	48 44.67	4 48.770		
	A. C., 20217	4.0	15.4	26.7	49 15.37	3 44.720	0 30.70	17.084
	Virginia	29.2	40.8	52.0	50 40.67	4 48.702		
	A. C., 20217	0.0	11.5	22.6	51 11.37	3 44.770	0 30.70	16.966
	Virginia	40.7	52.0	3.2	55 51.97	4 49.350		
	A. C., 20217	11.9	23.4	34.7	56 23.33	3 45.161	— 0 31.36	— 17.223
20	A. C., 20055	1.2	12.7	23.9	19 5 12.60	4 32.379	+ 1 6.03	+ 10.538
	Virginia	7.5	18.6	29.8	6 18.63	3 34.875		
	A. C., 20055	26.8	38.4	49.4	7 38.20	4 32.431	+ 1 6.37	+ 10.655
	Virginia	33.2	44.7	55.8	8 44.57	3 34.810		

RESULTS.

Corr. Chron. — 4 m. 16.94 s.

	α h. m. s.	δ ° ′ ″
A. C., 20217,	19 57 31.91	—16 45 47.43

Virginia—A. C., 20217,

		Δα m. s.	Δδ ′ ″
Sid. T.	18 37 7.94	+ 1 11.95	+ 3 39.93
	Δρ	.00	.21
	p —	.14	+ 5.93

Corr. Chron. — 4 m. 25.16 s.

	α h. m. s.	δ ° ′ ″
A. C., 20217,	19 57 31.92	—16 45 47.66

Virginia—A. C., 20217,

		Δα m. s.	Δδ ′ ″
Sid. T.	18 35 56.97	— 0 30.58	— 4 20.36
	Δρ	.00	— .24
	p —	.14	+ 5.90

(Continued.)

VIRGINIA.

DATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT. A.	B.	C.	Mean.	MIC.	PLANET—STAR. Δ α	Δ mic.
1861.		s.	s.	s.	h. m. s.	w. revs.	m. s.	revs.
Aug. 20	A. C., 20055	38.8	50.0	1.4	19 9 50.07	4 32.464	+ 1 5.70	+ 10.698
	Virginia	44.9	55.2	7.2	10 55.77	3 34.800		
	A. C., 20055	42.9	54.3	5.4	11 54.20	4 32.562	1 6.03	10.606
	Virginia	48.8	0.5	11.4	13 0.23	3 34.990		
	A. C., 20055	52.6	4.0	15.3	15 3.97	4 32.710	1 6.13	10.583
	Virginia	58.8	10.2	21.3	16 10.10	3 35.161		
	A. C., 20055	52.8	4.4	15.5	17 4.23	4 32.749	1 5.90	10.593
	Virginia	58.9	10.2	21.3	18 10.13	3 35.190		
	A. C., 20055	14.8	26.0	37.2	19 26.00	4 32.919	1 5.77	10.484
	Virginia	20.6	31.8	42.9	20 31.77	3 35.469		
	A. C., 20055	16.6	28.2	39.3	21 28.03	4 32.909	1 5.87	10.472
	Virginia	22.6	34.2	44.9	22 33.90	3 35.471		
	A. C., 20055	59.0	10.6	21.7	26 10.43	4 33.070	1 5.85	10.514
	Virginia	- -	16.6	27.4	27 16.28	3 35.590		
	A. C., 20055	44.6	56.0	7.1	28 55.90	4 33.240	1 5.67	10.415
	Virginia	50.3	1.7	12.7	30 1.57	3 35.859		
	A. C., 20055	53.2	4.7	15.8	31 4.57	4 33.277	1 5.46	10.396
	Virginia	58.9	10.0	21.2	32 10.03	3 35.915		
	A. C., 20055	4.9	16.4	27.8	33 16.37	4 33.313	+ 1 5.53	+ 10.197
	Virginia	10.6	21.9	33.2	34 21.90	3 36.150		
23	Virginia	39.8	51.4	2.1	19 22 51.10	5 39.062		
	A. C., 20055	57.3	8.8	19.9	23 8.67	3 40.190	— 0 17.57	— 28.733
	Virginia	30.3	41.7	53.0	25 41.67	5 39.338		
	A. C., 20055	48.0	59.4	10.4	25 59.27	3 40.085	0 17.60	29.114
	Virginia	6.8	18.4	29.5	29 18.23	5 39.149		
	A. C., 20055	24.3	35.8	47.0	29 35.70	3 40.149	0 17.47	28.861
	Virginia	8.0	19.7	30.9	32 19.87	5 39.478		
	A. C., 20055	25.9	37.3	48.6	32 37.27	3 40.370	0 17.40	28.969
	Virginia	50.7	2.3	13.6	36 2.20	5 39.605		
	A. C., 20055	8.3	19.7	31.0	36 19.67	3 40.822	0 17.47	28.644
	Virginia	5.8	17.2	28.4	38 17.13	5 39.359		
	A. C., 20055	23.6	35.0	46.0	38 34.87	3 40.480	0 17.74	28.740
	Virginia	4.0	16.2	27.7	40 15.97	5 39.602		
	A. C., 20055	22.3	33.8	44.9	40 33.67	3 40.552	0 17.70	28.909
	Virginia	5.5	16.8	28.0	43 16.77	5 39.895		
	A. C., 20055	23.0	34.6	45.8	43 34.47	3 40.741	0 17.70	29.015
	Virginia	38.2	50.0	0.9	45 49.70	5 40.145		
	A. C., 20055	56.2	7.4	18.8	46 7.47	3 40.838	0 17.77	29.168
	Virginia	42.1	54.0	- -	47 53.70	5 40.192		
	A. C., 20055	0.2	11.7	22.9	48 11.60	3 40.882	0 17.90	29.171
	Virginia	46.1	57.3	8.9	51 57.43	5 40.280		
	A. C., 20055	4.4	16.0	27.2	52 15.87	3 40.810	0 18.44	29.331
	Virginia	42.3	53.8	4.7	55 53.60	5 39.782		
	A. C., 20055	- -	11.2	22.6	56 11.25	3 40.662	— 0 17.65	— 28.981

RESULTS.

Corr. Chron. + 0 m. 29.86 s.

	α h. m. s.	δ ° ′ ″
A. C., 20055,	19 46 13.74	—17 46 16.50

Virginia—A. C., 20055,

		Δα m. s.	Δδ ′ ″
Sid. T.	19 20 31.11	+ 1 5.86	+ 2 41.56
	Δρ	.00	.14
	p —	.04	+ 5.85

Corr. Chron. + 0 m. 7.46 s.

	α h. m. s.	δ ° ′ ″
A. C., 20055,	19 46 13.71	—17 46 16.86

Virginia—A. C., 20055,

		Δα m. s.	Δδ ′ ″
Sid. T.	19 42 20.03	— 0 17.74	— 7 25.54
	Δρ	.00	— .41
	p —	.01	+ 5.93

(Continued.)

VIRGINIA.

DATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT. A.	B.	C.	Mean.	MIC.	PLANET—STAR. Δ α	Δ mic.
1861.		s.	s.	s.	h. m. s.	w. revs.	m. s.	revs.
Aug. 23	Virginia	23.8	35.4	46.1	19 59 35.10	5 39.762		
	A. C., 20055	41.7	52.9	4.3	59 52.97	3 40.798	— 0 17.87	— 28.825
	Virginia	32.1	43.7	54.8	20 1 43.50	5 39.995		
	A. C., 20055	50.1	1.6	12.9	2 1.53	3 40.459	— 0 18.03	— 29.397
Aug. 24	Virginia	14.8	26.4	37.3	19 33 26.17	5 44.650		
	A. C., 20055	56.2	7.5	18.9	34 7.53	2 45.213	— 0 41.36	— 42.395
	Virginia	50.7	2.0	13.3	36 2.00	5 44.749		
	A. C., 20055	31.9	43.5	54.9	36 43.43	2 45.822	0 41.43	41.885
	Virginia	22.9	34.4	45.3	38 34.20	5 44.978		
	A. C., 20055	4.5	15.9	27.2	39 15.87	2 45.990	0 41.67	41.946
	Virginia	29.4	40.9	51.9	42 40.73	5 45.102		
	A. C., 20055	11.0	22.3	33.6	43 22.30	2 46.102	0 41.57	41.958
	Virginia	46.8	58.4	9.4	44 58.20	5 45.170		
	A. C., 20055	28.0	39.5	51.0	45 39.50	2 46.215	0 41.30	41.913
	Virginia	8.2	19.7	31.2	47 19.70	5 45.315		
	A. C., 20055	49.8	1.1	12.4	48 1.10	2 46.208	0 41.40	42.065
	Virginia	53.9	5.4	16.4	52 5.23	5 45.552		
	A. C., 20055	35.9	47.2	58.4	52 47.17	2 46.441	0 41.94	42.069
	Virginia	13.9	25.5	36.5	54 25.30	5 45.470		
	A. C., 20055	55.7	7.2	18.5	55 7.13	2 46.412	0 41.83	42.016
	Virginia	24.2	35.7	46.5	57 35.47	5 46.022		
	A. C., 20055	6.0	17.5	28.7	58 17.40	2 46.682	0 41.93	42.298
	Virginia	1.1	12.5	23.6	20 2 12.40	5 45.850		
	A. C., 20055	43.0	54.4	5.7	2 54.37	2 46.921	0 41.97	41.887
	Virginia	14.2	25.8	36.9	4 25.63	5 46.142		
	A. C., 20055	56.4	7.8	19.0	5 7.73	2 47.142	0 42.10	41.958
	Virginia	43.0	53.9	5.4	6 54.10	5 46.412		
	A. C., 20055	24.4	35.9	47.3	7 35.87	2 47.125	0 41.87	42.245
	Virginia	8.7	20.0	31.0	12 19.90	5 46.475		
	A. C., 20055	50.7	2.1	13.2	13 2.00	2 47.163	0 42.10	42.270
	Virginia	24.4	35.9	47.0	14 35.77	5 46.340		
	A. C., 20055	6.8	18.0	29.4	15 18.07	2 47.045	0 42.30	42.253
	Virginia	56.4	7.7	19.0	17 7.70	5 46.479		
	A. C., 20055	38.2	49.7	1.0	17 49.63	2 46.965	0 41.93	42.472
	Virginia	56.7	8.0	19.0	21 7.90	5 46.281		
	A. C., 20055	38.6	50.0	1.3	21 49.97	2 46.999	0 42.07	42.240
	Virginia	18.2	29.7	40.8	23 29.57	5 46.449		
	A. C., 20055	0.3	11.8	23.0	24 11.70	2 46.975	0 42.13	42.432
	Virginia	57.5	8.8	20.2	27 8.83	5 46.400		
	A. C., 20055	39.4	50.8	2.0	27 50.73	2 46.940	0 41.90	42.418
	Virginia	28.5	39.8	51.0	29 39.77	5 46.512		
	A. C., 20055	11.0	22.1	33.6	30 22.23	2 46.990	0 42.46	42.480
	Virginia	52.7	4.0	15.0	32 3.90	5 46.475		
	A. C., 20055	35.0	46.2	57.6	32 46.27	2 46.962	— 0 42.37	— 42.471

RESULTS.

m. s.
Corr. Chron. — 0 0.22

	α h. m. s.	δ ° ′ ″
A. C., 20055,	19 46 13.70	17 46 17.04

Virginia—A. C., 20055,

		Δα m. s.	Δδ ′ ″
Sid. T.	20 2 54.40	— 0 41.88	—10 48.33
	Δρ		— .56
	p +	.03	+ 5.84

THEMIS.

DATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT. A.	B.	C.	Mean.	MIC.	PLANET—STAR. Δ α	Δ mic.
1861.		s.	s.	s.	h. m. s.	w. revs.	m. s.	revs.
Aug. 31	(✡ 13)	- -	36.4	- -	20 10 36.40	5 35.450		
	Themis	- -	58.0	8.9	10 58.00	4 43.870		
	8085, B. A. C.	18.0	29.0	39.7	13 28.90	2 39.580	— 2 30.9	— 30.183
	(✡ 13)	12.5	22.9	33.7	19 23.03	5 35.250		
	Themis	- -	44.2	55.0	19 44.05	4 44.458		
	8085, B. A. C.	4.4	15.7	26.4	22 15.50	2 40.163	2 31.45	30.188
	(✡ 13)	10.4	20.7	31.2	26 20.77	5 35.698		
	Themis	- -	41.7	52.6	26 41.67	4 44.961		
	8085, B. A. C.	2.1	13.0	24.1	29 13.07	2 40.772	2 31.40	30.082
	(✡ 13)	27.9	38.9	48.9	34 38.57	5 36.441		
	Themis	- -	59.2	10.2	34 59.33	4 45.370		
	8085, B. A. C.	20.5	31.2	42.0	37 31.23	2 41.480	2 31.90	29.783
	(✡ 13)	22.8	33.4	43.9	43 33.33	5 36.958		
	Themis	- -	53.7	4.2	43 53.47	4 45.982		
	8085, B. A. C.	14.7	25.7	36.6	46 25.67	2 41.930	2 32.20	29.945
	(✡ 13)	31.4	42.2	52.8	21 12 42.13	5 38.671		
	Themis	- -	1.5	12.4	13 1.50	4 48.190		
	8085, B. A. C.	23.6	34.6	45.3	15 34.50	2 43.775	— 2 33.00	— 30.308
Sept. 2	Themis	44.0	54.7	5.8	20 21 54.83	4 34.472		
	Weisse XXIII, 88	52.0	2.7	13.7	25 2.80	4 36.261	— 3 7.97	+ 1.789
	Themis	16.7	27.8	38.6	27 27.70	4 34.898		
	Weisse XXIII, 88	24.7	35.8	46.7	30 35.73	4 36.725	3 8.03	1.827
	Themis	12.0	23.0	33.9	32 22.97	4 35.090		
	Weisse XXIII, 88	20.0	31.2	42.2	35 31.13	4 37.010	3 8.16	1.920
	Themis	14.4	25.4	36.4	37 25.40	4 35.682		
	Weisse XXIII, 88	22.7	33.8	44.8	40 33.77	4 37.252	3 8.37	1.570
	Themis	40.9	51.8	2.7	41 51.80	4 35.925		
	Weisse XXIII, 88	49.6	0.5	11.2	45 0.43	4 37.613	3 8.63	1.688
	Themis	24.9	35.9	46.8	47 35.87	4 36.319		
	Weisse XXIII, 88	33.8	44.7	55.4	50 44.63	4 37.982	3 8.76	1.663
	Themis	8.7	19.7	30.4	56 19.60	4 36.882		
	Weisse XXIII, 88	- -	28.6	39.4	59 28.55	4 38.272	3 8.95	1.390
	Themis	14.7	26.0	36.9	21 1 25.87	4 37.163		
	Weisse XXIII, 88	24.0	35.1	45.9	4 35.00	4 38.710	3 9.13	1.547
	Themis	34.9	46.2	57.0	6 46.03	4 37.385		
	Weisse XXIII, 88	44.8	55.7	6.3	9 55.60	4 38.961	3 9.57	1.576
	Themis	59.1	10.2	21.0	12 10.10	4 38.306		
	Weisse XXIII, 88	8.7	19.6	30.6	15 19.63	4 39.500	— 3 9.53	+ 1.194
6	8020, B. A. C.	28.3	39.8	50.3	21 14 39.47	1 44.520		
	Weisse XXII, 1203	19.1	29.9	40.9	16 29.97	3 42.290	+ 3 5.60	+ 16.148
	Themis	24.5	35.7	- -	19 35.57	2 39.000		
	(✡ 11)	32.9	43.7	54.7	19 43.77	2 37.441		
	Weisse XXII, 1203	33.8	44.6	55.5	21 44.63	3 42.400	3 5.24	15.653
	Themis	38.6	50.3	0.7	24 49.87	2 39.605		
	(✡ 10)	47.1	58.0	8.9	24 58.00	2 37.753		
	Weisse XXII, 1203	4.4	15.4	26.4	27 15.40	3 42.831	+ 3 4.97	+ 15.877
	Themis	9.3	20.6	31.2	30 20.37	2 39.812		
	(✡ 10)	17.8	29.0	39.9	30 28.90	2 37.852		

RESULTS.

Aug. 31

m. s.
Corr. Chron. — 0 57.03

	α h m. s.	δ ° ′ ″
8085, B. A. C.,	23 7 11.77	— 6 47 38.54

Themis—8085, B. A. C.,

		Δα m. s.	Δδ ′ ″
Sid. T.	20 33 55.97	— 2 31.81	— 7 42.34
	Δρ	+ .01	— .35
	p	— .11	+ 2.41

Sept. 2

m. s.
Corr. Chron. — 1 13.17

	α h. m. s.	δ ° ′ ″
Weisse XXIII, 88,	23 6 23.07	— 7 4 36.69

Themis—Weisse XXIII, 88,

		Δα m. s.	Δδ ′ ″
Sid. T.	20 45 18.85	— 3 8.71	+ 0 24.83
	Δρ	.00	.02
	p	— .10	+ 2.42

(Continued.)

THEMIS.

DATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT. A.	B.	C.	Mean.	MIC.	PLANET—STAR. Δ α	Δ mic.
1861.		s.	s.	s	h. m. s.	w. revs.	m. s.	revs.
Sept. 6	Weisse XXII, 1203	5.7	16.9	27.9	21 32 16.83	3 42.985	+ 3 4.84	+ 15.852
	Themis	10.6	21.9	32.5	35 21.67	2 39.991		
	(✡ 11)	19.2	30.4	41.2	35 30.27	2 38.300		
	Weisse XXII, 1203	25.9	36.9	47.7	37 36.83	3 43.168	3 4.90	15.626
	Themis	30.9	41.9	52.4	40 41.73	2 40.400		
	(✡ 11)	39.8	50.4	0.9	40 50.37	2 38.250		
	Weisse XXII, 1203	3.4	14.4	25.3	43 14.37	3 43.452	3 4.75	15.735
	Themis	8.1	19.2	..	46 19.12	2 40.575		
	(✡ 11)	17.0	27.9	38.6	46 27.83	2 38.498		
	Weisse XXII, 1203	26.7	37.7	48.4	49 37.60	3 43.722	+ 3 4.30	+ 15.711
	Themis	31.0	42.0	52.7	52 41.90	2 40.869		
	(✡ 11)	40.6	50.8	1.7	52 51.03	2 38.920		
13	8016, B. A. C.	29.1	40.4	51.6	21 31 40.37	3 43.382	+ 1 3.40	— 14.392
	Themis	32.7	44.0	54.6	32 43.77	4 44.740		
	8016, B. A. C.	46.4	57.7	8.5	33 57.53	3 43.582	1 3.14	14.163
	Themis	49.7	0.8	11.5	35 0.67	4 44.711		
	8016, B. A. C.	53.0	4.4	15.2	36 4.20	3 43.592	1 3.00	14.183
	Themis	..	7.4	18.2	37 7.20	4 44.741		
	8016, B. A. C.	7.9	19.0	29.9	39 18.70	3 43.740	1 3.13	14.367
	Themis	10.7	22.0	32.8	40 21.83	4 45.073		
	8016, B. A. C.	30.4	41.4	52.2	41 41.33	3 44.029	1 2.97	14.041
	Themis	33.3	44.3	55.3	42 44.30	4 45.036		
	8016, B. A. C.	26.3	37.5	48.4	44 37.40	3 43.916	1 2.87	14.564
	Themis	29.4	40.2	51.2	45 40.27	4 45.446		
	8016, B. A. C.	43.3	54.3	5.3	46 54.30	3 44.135	1 2.83	14.377
	Themis	46.2	57.2	8.0	47 57.13	4 45.478		
	8016, B. A. C.	8.9	19.9	30.8	49 19.87	3 44.231	1 2.90	14.474
	Themis	11.8	22.8	33.7	50 22.77	4 45.671		
	8016, B. A. C.	18.6	29.7	40.4	52 29.57	3 44.452	1 2.23	14.472
	Themis	20.9	31.9	42.6	53 31.80	4 45.890		
	8016, B. A. C.	44.2	55.4	6.4	54 55.33	3 44.481	+ 1 2.67	— 14.573
	Themis	47.0	58.1	8.9	55 58.00	4 46.020		

RESULTS.

Corr. Chron. — 1 m. 33.74 s.

	α h. m. s.	δ ° ′ ″
Weisse XXII, 1203,	22 57 14.54	— 7 25 58.76

Themis—Weisse XXII, 1202,

		Δα m. s.	Δδ ′ ″
Sid. T.	21 34 7.72	+ 3 4.94	+ 4 2.84
	Δρ	.00	.14
	p	— .06	+ 2.48

Corr. Chron. — 2 m. 37.08 s.

	α h. m. s.	δ ° ′ ″
8016, B. A. C.,	22 54 14.52	— 7 48 10.63

Themis—8016, B. A. C.,

		Δα m. s.	Δb ′ ″
Sid. T.	21 41 31.69	+ 1 2.91	— 3 40.70
	Δρ	.00	— .14
	p	— .06	+ 2.49

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CIRCE.

DATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT. A.	B.	C.	Mean.	MIC.	PLANET—STAR. Δ α	Δ mic.
		s.	s.	s.	h. m. s.	w. revs.	m. s.	revs.
1861. Sept. 14	Circe	16.8	27.4	38.3	21 34 27.50	5 28.585		
	Weisse XXIII, 783	22.5	33.6	44.1	34 33.40	3 37.212	— 0 5.90	— 21.234
	Circe	30.8	41.5	51.8	36 41.37	5 28.950		
	Weisse XXIII, 783	36.6	47.5	58.2	36 47.43	3 37.211	0 6.06	21.600
	Circe	36.9	47.6	58.4	39 47.63	5 29.211		
	Weisse XXIII, 783	42.7	53.9	4.8	39 53.80	3 37.328	0 6.17	21.744
	Circe	28.3	39.2	50.3	44 39.27	5 29.478		
	Weisse XXIII, 783	34.8	46.1	56.8	44 45.90	3 37.610	0 6.63	21.729
	Circe	55.6	7.0	17.4	47 6.67	5 29.610		
	Weisse XXIII, 783	2.1	13.2	23.7	47 13.00	3 37.877	0 6.33	21.594
	Circe	10.4	21.3	32.2	52 21.30	5 29.988		
	Weisse XXIII, 783	16.8	27.8	38.2	52 27.60	3 27.990	0 6.30	21.859
	Circe	20.5	31.3	42.4	57 31.40	5 30.162		
	Weisse XXIII, 783	27.2	38.2	48.9	57 38.10	3 38.091	0 6.70	21.932
	Circe	42.2	53.4	3.9	59 53.17	5 30.420		
	Weisse XXIII, 783	48.9	59.9	10.9	59 59.90	3 38.372	— 0 6.73	— 21.909
24	Weisse XXIII, 609	49.2	0.2	10.7	22 22 0.03	5 35.725		
	Weisse XXIII, 613	54.8	5.7	16.0	22 5.50	4 37.323	+ 0 51.07	+ 19.749
	Circe	45.7	56.2	7.8	22 56.67	3 30.608		
	Weisse XXIII, 609	39.4	50.3	0.9	27 50.20	5 36.130		
	Weisse XXIII, 613	44.8	55.7	6.3	27 55.60	4 37.810	0 50.90	19.759
	Circe	35.5	46.5	57.5	28 46.50	3 31.085		
	Weisse XXIII, 609	2.1	13.0	23.7	35 12.93	5 36.257		
	Weisse XXIII, 613	7.9	18.8	29.4	35 18.70	4 37.010	0 50.47	19.202
	Circe	58.1	9.6	19.8	36 9.17	3 31.742		
	2822, Lamont	3.2	..	25.0	36 14.10	1 28.940		
	2823, Lamont	7.5	..	29.8	36 18.65	1 38.908		
	2824, Lamont	..	29.6	40.4	37 29.47	3 34.533		
	Weisse XXIII, 609	28.0	38.9	50.0	42 38.97	5 36.778		
	Weisse XXIII, 613	33.8	44.7	55.2	42 44.57	4 38.770	0 50.00	19.614
	Circe	23.7	34.8	45.2	43 34.57	3 32.190		
	Weisse XXIII, 609	55.6	7.0	17.4	47 6.67	5 37.142		
	Weisse XXIII, 613	1.6	12.3	22.8	47 12.23	4 38.965	0 50.24	19.456
	Circe	51.7	2.7	13.0	48 2.47	3 32.543		
	Weisse XXIII, 609	27.2	38.1	48.8	55 38.03	5 37.695		
	Weisse XXIII, 613	33.0	43.8	54.6	55 43.80	4 39.276	+ 0 49.85	+ 18.928
	Circe	22.8	33.7	..	56 33.65	3 33.382		
25	Weisse XXIII, 613	23.9	34.8	45.4	21 22 34.70	3 47.448	+ 0 7.65	— 5.252
	Circe	31.6	42.4	..	22 42.35	3 52.700		
	(☉ 10 5)	33.7	44.7	55.5	22 44.60	5 43.782		
	Weisse XXIII, 613	16.0	26.8	37.2	26 26.67	3 47.545	0 7.45	5.638
	Circe	23.4	34.3	..	26 34.12	4 40.149		
	(☉ 10.5)	25.8	36.2	47.8	26 36.60	5 43.948		
	Weisse XXIII, 613	6.9	17.4	28.9	30 17.73	3 47.922	0 7.55	5.462
	Circe	13.2	25.2	..	30 25.28	4 40.350		
	(☉ 10.5)	16.1	27.8	38.5	30 27.47	5 44.050		
	Weisse XXIII, 613	21.9	32.9	43.7	36 32.83	3 48.298	+ 0 7.45	— 5.459
	Circe	29.6	40.1	..	36 40.28	4 40.723		
	(☉ 10.5)	31.2	42.9	53.5	36 42.53	5 44.329		

RESULTS.

Corr. Chron. — 2 m. s. 44.79

	α h. m. s.	δ ° ′ ″
Weisse XXIII, 783,	23 38 57.45	— 0 30 14.81

Circe—Weisse XXIII, 783

	h. m. s.	Δα m. s.	Δδ ′ ″
Sid. T.	21 43 48.75	— 0 6.35	— 5 33.52
		Δρ .00	— .18
		p + .11	+ 2.78

Corr. Chron. — 4 m. s. 5.91

	α h. m. s.	δ ° ′ ″
Weisse XXIII, 613,	23 30 12.71	— 1 48 55.87

Circe—Weisse XXIII, 613,

	h. m. s.	Δα m. s.	Δδ ′ ″
Sid. T.	22 35 14.58	+ 0 50.42	+ 4 58.94
		Δρ .00	.14
		p + .05	+ 2.85

(Continued.)

CIRCE.

DATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT. A.	B.	C.	Mean.	MIC.	PLANET—STAR. Δ α	Δ mic.
1861.		s.	s.	s.	h. m. s.	w. revs.	m. s.	revs.
Sept. 25	Weisse XXIII, 613	18.4	29.4	40.2	21 46 29.33	3 49.003	+ 0 6.80	— 5.517
	Circe	25.2	36.2	- -	46 36.13	4 41.486		
	(* 10.5)	28.5	39.0	49.8	46 39.10	5 45.039		
	Weisse XXIII, 613	46.4	57.2	8.0	22 1 57.20	3 49.440	0 6.25	5.959
	Circe	52.6	3.5	- -	2 3.45	4 42.365		
	(* 10.5)	56.2	7.0	17.9	2 7.03	5 45.942		
	Weisse XXIII, 613	23.9	35.0	45.9	9 34.93	3 49.823	0 5.72	6.453
	Circe	30.1	- -	51.2	9 40.65	4 43.242		
	(* 10.5)	33.9	44.8	55.4	9 44.70	5 46.238		
	Weisse XXIII, 613	16.9	28.0	38.9	14 27.93	3 50.185	0 5.64	6.352
	Circe	22.8	33.4	44.5	14 33.57	4 43.503		
	(* 10.5)	26.7	37.8	48.3	14 37.60	5 46.412		
	Weisse XXIII, 613	58.0	8.8	19.8	17 8.87	3 50.390	0 5.63	6.175
	Circe	3.7	14.8	25.0	17 14.50	4 43.531		
	(* 10.5)	7.4	18.8	29.4	17 18.53	5 46.642		
	Weisse XXIII, 613	43.9	54.7	5.3	19 54.63	3 50.472	+ 0 5.50	— 6.332
	Circe	49.4	0.2	10.8	20 0.13	4 43.770		
	(* 10.5)	53.5	4.4	15.2	20 4.37	5 46.822		

RESULTS.

m. s.
Corr. Chron. — 4 14.38

	α h. m. s.	δ ° ′ ″
Weisse XXIII, 613,	23 30 12.73	— 1 48 55.84

Circe—Weisse XXIII, 613,

	Δα h. m. s.	Δδ ′ ″
Sid. T.	21 48 24.67	+ 0 6.56 — 1 30.06
Δρ		.00 — .05
ρ		+ .10 + 2.86

MELETE.

DATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT. A.	B.	C.	Mean.	MIC.	PLANET—STAR. Δ α	Δ mic.
1861.		s.	s.	s.	h. m. s.	w. revs.	m. s.	revs.
Sept. 30	Weisse XX, 849	18.5	29.4	40.4	21 53 29.43	1 34.272	+ 1 35.77	— 67.736
	Melete	54.2	5.3	16.1	55 5.20	5 42.047		
	Weisse XX, 849	26.2	37.2	47.7	56 36.97	1 34.186	1 35.60	68.137
	Melete	1.3	12.8	23.6	58 12.57	5 42.362		
	Weisse XX, 849	48.4	59.2	10.0	59 59.20	1 34.336	1 35.90	67.774
	Melete	24.0	35.3	46.0	22 1 35.10	5 42.149		
	Weisse XX, 849	57.6	8.4	19.2	9 8.40	1 34.450	1 36.23	68.084
	Melete	33.6	44.7	55.6	10 44.63	5 42.573		
	Weisse XX, 849	6.3	17.2	28.2	12 17.23	1 34.452	1 36.50	68.209
	Melete	42.7	53.8	- -	13 53.73	5 42.700		
	Weisse XX, 849	10.7	21.8	32.4	34 21.63	1 34.559	1 36.97	68.665
	(✡ 11)	23.2	34.2	- -	35 34.08	5 43.690		
	Melete	47.4	58.7	9.7	35 58.60	5 43.263		
	Weisse XX, 849	56.0	6.9	18.0	38 6.97	1 34.688	1 37.13	68.393
	Melete	33.0	44.3	55.0	39 44.10	5 43.120		
	Weisse XX, 849	30.8	41.7	52.5	41 41.67	1 34.621	1 37.03	68.396
	Melete	7.7	18.8	29.6	43 18.70	5 43.056		
	Weisse XX, 849	30.2	40.8	51.7	44 40.90	1 34.642	+ 1 37.37	— 68.474
	Melete	7.3	18.3	29.2	46 18.27	5 43.155		
Oct 3	Melete	0.9	11.7	22.8	21 53 11.80	5 30.021		
	(✡ 109) W.	32.2	42.9	53.9	53 43.00	5 31.060		
	(✡ 108) W.	45.4	56.2	7.0	53 56.20	3 29.862	— 0 44.40	— 30.020
	Melete	32.1	42.9	54.2	58 43.07	5 30.102		
	(✡ 109) W.	3.4	14.7	25.2	59 14.43	5 31.068		
	(✡ 108) W.	16.8	27.6	38.4	59 27.60	3 29.578	0 44.43	30.385
	Melete	9.6	21.0	32.7	22 3 20.77	5 30.109		
	(✡ 109) W.	40.7	51.8	2.6	3 51.70	5 30.991		
	(✡ 108) W.	53.9	5.0	15.8	4 4.90	3 29.270	0 44.13	30.700
	Melete	23.8	34.3	45.6	6 34.57	5 30.071		
	(✡ 109) W.	54.6	5.8	16.6	7 5.67	5 30.879		
	(✡ 108) W.	8.0	19.0	30.0	7 19.00	3 29.582	0 44.43	30.350
	Melete	48.8	59.9	10.4	11 59.70	5 30.091		
	(✡ 109) W.	19.6	30.6	41.4	12 30.53	5 30.821		
	(✡ 108) W.	32.7	43.9	54.8	12 43.80	3 29.495	— 0 44.10	— 30.457
4	(✡ 109) W.	17.7	28.4	39.3	23 13 28.47	3 42.321		
	(✡ 108) W.	30.6	41.4	52.1	13 41.37	1 40.720	+ 0 7.60	— 44.607
	Melete	38.2	49.0	59.7	13 48.97	4 42.432		
	(✡ 109) W.	49.7	0.7	11.7	17 0.70	3 42.271		
	(✡ 108) W.	2.7	13.8	24.8	17 13.77	1 40.543	0 7.95	45.049
	Melete	10.7	21.7	- -	17 21.72	4 42.697		
	(✡ 109) W.	9.7	20.8	31.7	21 20.73	3 42.192		
	(✡ 108) W.	23.2	33.4	44.6	21 33.73	1 40.500	0 7.87	44.515
	Melete	30.8	41.7	52.3	21 41.60	4 42.120		
	(✡ 109) W.	50.8	1.9	12.7	25 1.80	3 41.870		
	(✡ 108) W.	4.0	14.9	25.2	25 14.70	1 40.240	0 8.10	44.827
	Melete	11.7	22.8	33.9	25 22.80	4 42.172		
	(✡ 109) W.	9.5	20.5	31.7	28 20.57	3 41.712		
	(✡ 108) W.	22.9	33.7	44.4	28 33.67	1 40.202	+ 0 8.06	— 44.743
	Melete	30.9	41.8	52.5	28 41.73	4 42.050		

RESULTS.

Corr. Chron. — 5 m. 6.15 s.

	α h. m. s.	δ ° ′ ″
Weisse XX, 849,	20 33 38.58	—10 7 57.97

Melete—Weisse XX, 849,

		Δα m. s.	Δδ ′ ″
Sid. T.	22 15 26.17	+ 1 36.50	—17 28.27
	Δρ	— .02	— .76
	p	+ .14	+ 4.63

Corr. Chron. — 5 m. 32.80 s.

	α h. m. s.	δ ° ′ ″
(✡ 108) W.,	20 38 24.98	—10 29 17.32

Melete—(✡ 108) W.,

		Δα m. s.	Δδ ′ ″
Sid. T.	21 57 13.78	— 0 44.30	— 7 46.97
	Δρ	.00	— .32
	p	+ .11	+ 4.56

Corr. Chron. — 5 m. 41.61 s.

	α h. m. s.	δ ° ′ ″
(✡ 108) W.,	20 38 24.96	—10 29 17.29

Melete—(✡ 108) W.,

		Δα m. s.	Δδ ′ ″
Sid. T.	23 24 20.55	+ 0 8.18	—11 27.23
	Δρ	— .04	— .66
	p	+ .21	+ 4.34

(Continued.)

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MELETE.

DATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT. A.	B.	C.	Mean.	MIC.	PLANET—STAR. Δ α	Δ mic.
1861.		s.	s.	s.	h. m. s.	w. revs.	m. s.	revs.
Oct. 4	(✡ 109) W. - - - -	54. 2	5. 2	16. 0	23 32 5. 13	3 41. 820		
	(✡ 108) W. - - - -	7. 4	17. 8	28. 9	32 18. 03	1 40. 192	+ 0 8. 14	— 44. 523
	Melete - - - -	15. 4	26. 2	36. 9	32 26. 17	4 41. 820		
	(✡ 109) W. - - - -	23. 2	34. 4	44. 6	35 34. 07	3 41. 490		
	(✡ 108) W. - - - -	36. 8	47. 3	58. 3	35 47. 47	1 39. 960	0 8. 16	44. 726
	Melete - - - -	44. 7	55. 8	6. 4	35 55. 63	4 41. 791		
	(✡ 109) W. - - - -	41. 9	52. 8	3. 4	37 52. 70	3 41. 332		
	(✡ 108) W. - - - -	55. 2	5. 9	16. 9	38 6. 00	1 39. 840	0 8. 50	44. 657
	Melete - - - -	3. 9	14. 4	25. 2	38 14. 50	4 41. 602		
	(✡ 109) W. - - - -	23. 7	34. 7	45. 2	41 34. 53	3 41. 388		
	(✡ 108) W. - - - -	36. 8	47. 8	58. 5	41 47. 70	1 39. 506	0 8. 73	44. 645
	Melete - - - -	45. 9	56. 4	7. 0	41 56. 43	4 41. 256		
	(✡ 109) W. - - - -	19. 4	30. 2	40. 9	44 30. 17	3 40. 905		
	(✡ 108) W. - - - -	32. 8	43. 2	54. 0	44 43. 33	1 39. 401	+ 0 8. 74	— 44. 850
	Melete - - - -	41. 5	51. 8	2. 9	44 52. 07	4 41. 356		
8	Weisse XX, 1059 -	5. 9	16. 9	27. 6	22 28 16. 80	2 42. 272	+ 0 28. 40	— 3. 447
	Melete - - - -	34. 2	45. 4	56. 0	28 45. 20	2 45. 717		
	Weisse XX, 1059 -	35. 3	46. 2	57. 0	31 46. 17	2 42. 228	0 28. 50	3. 715
	Melete - - - -	3. 6	14. 8	25. 6	32 14. 67	2 45. 943		
	Weisse XX, 1059 -	49. 7	0. 7	11. 9	34 0. 77	2 42. 371	0 28. 40	3. 648
	Melete - - - -	18. 0	29. 3	50. 2	34 29. 17	2 46. 019		
	Weisse XX, 1059 -	15. 7	26. 7	37. 4	37 26. 60	2 42. 332	0 28. 70	3. 578
	Melete - - - -	44. 2	55. 6	6. 1	37 55. 30	2 45. 910		
	Weisse XX, 1059 -	37. 9	49. 0	59. 7	39 48. 57	2 42. 320	0 29. 30	3. 671
	Melete - - - -	6. 9	18. 0	28. 7	40 17. 87	2 45. 991		
	Weisse XX, 1059 -	18. 0	29. 0	39. 7	42 28. 90	2 42. 403	0 29. 00	3. 585
	Melete - - - -	46. 9	58. 0	8. 8	42 57. 90	2 45. 988		
	Weisse XX, 1059 -	52. 0	3. 2	14. 0	44 3. 07	2 42. 282	0 29. 10	3. 650
	Melete - - - -	21. 0	32. 3	43. 2	45 32. 17	2 45. 932		
	Weisse XX, 1059 -	9. 7	20. 8	31. 6	23 3 20. 70	2 42. 380	0 29. 80	3. 852
	Melete - - - -	39. 6	50. 7	1. 2	3 50. 50	2 46. 232		
	Weisse XX, 1059 -	43. 4	54. 2	5. 2	5 54. 27	2 42. 310	0 29. 86	3. 915
	Melete - - - -	13. 0	24. 4	35. 0	6 24. 13	2 46. 225		
	Weisse XX, 1059 -	5. 5	16. 2	27. 1	8 16. 27	2 42. 318	+ 0 29. 76	— 3. 894
	Melete - - - -	35. 0	46. 2	56. 9	8 46. 03	2 46. 212		

RESULTS.

m. s.
Corr. Chron. — 6 18. 03

	α h. m. s.	δ ° ′ ″
Weisse XX, 1059,	20 41 42. 23	—10 52 4. 66

Melete—Weisse XX, 1059,

		Δα m. s.	Δδ ′ ″
Sid. T.	h. m. s. 22 39 49. 26	+ 0 29. 08	— 0 56. 92
	Δρ	. 00	— . 04
	ρ	+ . 15	+ 4. 31

IRENE.

DATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT. A.	B.	C.	Mean.	MIC.	PLANET—STAR. Δ α	Δ mic.
		s.	s.	s.	h. m. s.	w. revs.	m. s.	revs.
1861. Oct. 24	Irene - - - -	9.2	19.6	30.7	23 49 19.83	4 47.475		
	Weisse XXIII, 585 -	3.4	14.4	24.9	50 14.23	1 48.965	— 0 54.40	— 41.405
	Irene - - - -	3.8	14.9	25.5	53 14.73	4 47.890		
	Weisse XXIII, 585 -	58.6	9.5	20.3	54 9.47	1 48.985	0 54.74	41.800
	(✪ 10) - - - -	20.8	31.7	42.2	56 31.57	3 49.838		
	Irene - - - -	34.9	46.3	56.7	56 45.97	4 48.015		
	Weisse XXIII, 585 -	29.7	40.4	51.2	57 40.43	1 49.301	0 54.46	41.609
	(* 10) - - - -	5.7	17.2	27.7	0 1 16.87	3 50.350		
	Irene - - - -	20.2	31.1	41.8	1 31.03	4 48.225		
	Weisse XXIII, 585 -	14.9	26.2	36.7	2 25.93	1 49.581	0 54.90	41.539
	(✪ 10) - - - -	44.0	54.8	5.4	7 54.73	3 50.369		
	Irene - - - -	57.5	8.1	19.3	8 8.30	4 48.828		
	Weisse XXIII, 585 -	52.8	3.9	14.5	9 3.73	1 50.018	— 0 55.43	— 41.705
29	Weisse II, 455 - -	11.4	22.3	33.0	23 51 22.23	2 44.675	+ 0 39.20	— 29.896
	Weisse II, 462 - -	34.4	45.1	55.9	51 45.13	2 44.160		
	(✪ 11) - - - -	47.2	58.2	8.9	51 58.10	4 41.510		
	Irene - - - -	50.4	1.5	12.4	52 1.43	4 48.678		
	Weisse II, 455 - -	32.2	43.0	54.0	52 43.07	2 45.000	0 39.40	29.761
	Irene - - - -	11.3	22.2	32.9	53 22.47	4 48.868		
	Weisse II, 455 - -	0.1	11.2	21.9	55 11.07	2 45.156	0 38.86	29.639
	Irene - - - -	39.0	49.9	0.9	55 49.93	4 48.902		
	Weisse II, 455 - -	53.5	4.5	15.5	57 4.50	2 45.249	0 38.67	29.672
	Irene - - - -	32.4	43.2	53.9	57 43.17	4 49.028		
	Weisse II, 455 - -	43.1	53.9	5.0	58 54.00	2 45.345	0 38.67	29.748
	Irene - - - -	21.8	32.6	43.6	59 32.67	4 49.200		
	Weisse II, 455 - -	42.5	53.2	3.9	0 0 53.20	2 45.430	0 38.67	29.791
	Irene - - - -	21.0	32.0	42.6	1 31.87	4 49.328		
	Weisse II, 455 - -	21.7	32.5	43.6	3 32.60	2 45.631	0 38.57	29.952
	Irene - - - -	0.2	11.3	22.0	4 11.17	4 49.690		
	Weisse II, 455 - -	12.6	23.7	34.6	5 23.63	2 45.728	0 38.44	29.843
	Irene - - - -	51.1	2.2	12.9	6 2.07	4 49.678		
	Weisse II, 455 - -	47.3	58.2	9.0	7 58.17	2 45.776	0 38.46	29.845
	Irene - - - -	25.9	36.6	47.4	8 36.63	4 49.728		
	Weisse II, 455 - -	31.1	42.1	53.0	9 42.10	2 45.915	+ 0 38.10	— 29.668
	Irene - - - -	9.3	20.3	31.0	10 20.20	4 49.690		
Nov. 4	Irene - - - -	42.0	53.4	3.9	23 31 53.10	2 36.382		
	(✪ 11) - - - -	46.3	57.3	7.9	51 57.17	2 32.992		
	Weisse II, 415 - -	11.8	22.9	33.8	54 22.83	2 36.302	— 2 29.73	— 0.082
	Irene - - - -	58.2	9.1	19.7	57 9.00	2 36.895		
	(* 11) - - - -	2.4	13.2	24.0	57 13.20	2 32.931		
	Weisse II, 415 - -	28.2	39.0	49.8	59 39.00	2 36.399	2 30.00	0.496
	Irene - - - -	40.7	51.6	2.2	0 1 51.50	2 37.301		
	(✪ 11) - - - -	44.8	55.6	6.7	1 55.70	2 33.200		
	Weisse II, 415 - -	10.6	21.7	32.7	4 21.67	2 36.866	2 30.17	0.435
	Irene - - - -	43.6	54.9	5.6	6 54.70	2 37.384		
	(✪ 11) - - - -	48.4	59.4	10.4	6 59.40	2 33.260		
	Weisse II, 415 - -	14.1	25.5	36.2	9 25.27	2 37.029	— 2 30.57	— 0.355

RESULTS.

Corr. Chron. + 6 m. 7.52 s.

	α h. m. s.	δ ° ′ ″
Weisse II, 585,	2 34 10.55	+ 3 50 8.90

Irene—Weisse II, 585,

		Δα m. s.	Δδ ′ ″
Sid. T.	0 3 55.49	— 0 54.79	—10 39.55
	Δρ	.01	— .32
	p —	.13	+ 2.54

Corr. Chron. + 5 m. 22.57 s.

	α h. m. s.	δ ° ′ ″
Weisse II, 455,	2 27 58.75	+ 3 31 15.74

Irene—Weisse II, 455,

		Δα m. s.	Δδ ′ ″
Sid. T.	0 6 20.73	+ 0 38.70	— 7 37.72
	Δρ +	.00	— .22
	p —	.13	+ 2.58

(Continued.)

IRENE.

DATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT. A.	B.	C.	Mean.	MIC.	PLANET—STAR. Δ α	Δ mic.	RESULTS.
1861.		s.	s.	s.	h. m. s.	w. revs.	m. s.	revs.	
Nov. 4	Irene - - - -	20.9	31.8	42.5	0 10 31.73	2 37.831			m. s.
	Weisse II, 415 - -	51.6	2.2	12.9	13 2.23	2 37.252	— 2 30.50	— 0.579	Corr. Chron. + 4 35.74
									α δ
	Irene - - - -	28.9	40.2	50.9	14 40.00	2 38.135			h. m. s. ° ′ ″
	Weisse II, 415 - -	59.8	10.9	21.7	17 10.80	2 37.401	2 30.80	0.734	Weisse II, 415, 2 25 30.26 + 3 7 38.57
	Irene - - - -	12.7	23.4	34.2	19 23.43	2 38.328			Irene—Weisse II, 415,
	Weisse II, 415 - -	42.9	54.2	4.9	21 54.00	2 37.702	2 30.57	0.626	Δα Δδ
	Irene - - - -	53.4	4.2	14.9	22 4.17	2 38.561			h. m. s. m. s. ′ ″
	Weisse II, 415 - -	23.8	34.5	45.2	24 34.50	2 37.933	2 30.33	0.628	Sid. T. 0 22 11.96 — 2 30.64 — 0 9.00
									Δ ρ .00 — .00
	Irene - - - -	28.6	39.2	50.4	25 39.40	2 38.761			p — .11 + 2.61
	Weisse II, 415 - -	59.9	10.7	21.6	28 10.73	2 37.995	2 30.33	0.766	
	Irene - - - -	8.9	19.9	30.9	29 19.90	2 38.828			
	Weisse II, 415 - -	39.7	50.4	1.4	31 50.50	2 38.301	2 30.60	0.527	
	Irene - - - -	38.0	48.9	59.9	32 48.93	2 39.166			
	Weisse II, 415 - -	9.6	20.4	31.2	35 20.40	2 38.281	2 31.47	0.885	
	Irene - - - -	15.4	26.6	37.0	36 26.33	2 39.241			
	Weisse II, 415 - -	47.1	57.8	8.7	38 57.87	2 38.529	2 31.54	0.712	
	Irene - - - -	58.0	8.7	19.5	40 8.73	2 39.471			
	Weisse II, 415 - -	29.6	40.6	51.2	42 40.47	2 38.695	— 2 31.74	— 0.776	

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ENCKE'S COMET.

DATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT. A.	B.	C.	Mean.	MIC.	COMET—STAR. Δα	Δ mic.
1861.		s.	s.	s.	h. m. s.	w. revs.	m. s.	revs.
Nov. 7	Weisse XXII, 1159	2. 1	14. 3	25. 2	1 19 13. 87	1 46. 492	+ 0 43. 43	— 40. 135
	Comet	45. 9	57. 5	8. 5	19 57. 30	4 43. 732		
21	Weisse XXII, 645	58. 7	9. 8	20. 7	0 30 9. 73	1 41. 120		
	Weisse XXII, 658	26. 8	37. 4	48. 3	30 37. 50	3 35. 211	+ 2 39. 39	— 27. 845
	Comet	7. 0	16. 6	27. 0	33 16. 87	5 33. 195		
	(✡ 9)	49. 8	0. 1	11. 5	34 0. 47	5 36. 449		
	Weisse XXII, 645	34. 8	45. 9	56. 7	38 45. 80	1 41. 338		
	Weisse XXII, 658	2. 4	13. 6	24. 6	39 13. 53	3 35. 360	+ 2 39. 47	— 28. 159
	Comet	42. 8	52. 9	3. 3	41 53. 00	5 33. 658		
	(✡ 9)	25. 7	36. 6	47. 5	42 36. 60	5 36. 628		
26	Comet	4. 8	15. 5	26. 8	23 39 15. 70	4 52. 922		
	Weisse XXII, 601	- -	36. 2	46. 7	39 36. 50	3 46. 338	— 0 20. 80	— 19. 618
	Comet	57. 7	9. 0	19. 7	42 8. 80	4 53. 200		
	Weisse XXII, 601	- -	28. 7	39. 7	42 28. 65	3 46. 301	0 19. 85	19. 933
	Comet	15. 3	26. 2	36. 2	46 25. 90	4 53. 530		
	Weisse XXII, 601	- -	46. 0	56. 9	46 46. 15	3 46. 130	0 20. 25	20. 434
	Comet	32. 4	41. 7	54. 6	49 42. 90	4 54. 071		
	Weisse XXII, 601	- -	3. 9	14. 5	50 3. 95	3 46. 800	0 21. 05	20. 305
	44272, Lalande	34. 3	45. 1	55. 9	52 45. 10	1 53. 900		
	44279, Lalande	42. 9	53. 9	4. 6	52 53. 80	1 50. 169		
	(✡ 9.5)	54. 7	5. 4	16. 4	53 5. 50	1 46. 152		
	Comet	9. 4	19. 8	30. 9	0 38 20. 03	5 39. 249		
	Weisse XXII, 601	- -	42. 8	53. 8	38 42. 98	4 33. 599	— 0 22. 95	— 22. 716
30	Weisse XXII, 518	25. 3	37. 2	47. 9	23 51 36. 80	5 33. 845	+ 0 29. 10	+ 19. 041
	Comet	- -	5. 9	- -	52 5. 90	4 31. 870		
	Weisse XXII, 518	12. 8	24. 0	34. 9	54 23. 90	5 33. 838	0 26. 50	19. 252
	Comet	- -	50. 4	- -	54 50. 40	4 31. 652		
	Weisse XXII, 518	29. 6	40. 7	51. 2	0 0 40. 50	5 33. 905	0 27. 40	19. 303
	Comet	- -	7. 9	- -	1 7. 90	4 31. 668		
	Weisse XXII, 518	25. 3	36. 2	46. 8	5 36. 10	5 34. 311	0 28. 10	18. 787
	Comet	- -	4. 2	- -	6 4. 20	4 32. 590		
	Weisse XXII, 518	1. 0	11. 4	22. 2	12 11. 53	5 34. 132	0 28. 17	18. 824
	Comet	- -	39. 7	- -	12 39. 70	4 32. 374		
	Weisse XXII, 518	11. 9	22. 7	33. 5	25 22. 70	5 33. 891	0 28. 00	18. 349
	Comet	- -	50. 7	- -	25 50. 70	4 32. 608		
	Weisse XXII, 518	5. 4	16. 0	26. 6	30 16. 00	5 33. 959	0 26. 70	18. 142
	Comet	- -	42. 7	- -	30 42. 70	4 32. 883		
	Weisse XXII, 518	48. 5	59. 7	10. 0	37 59. 40	5 34. 178	0 27. 00	18. 006
	Comet	- -	26. 4	- -	38 26. 40	4 33. 238		
	Weisse XXII, 518	18. 3	29. 3	39. 8	50 29. 13	5 33. 818	0 25. 47	17. 993
	Comet	- -	54. 6	- -	50 54. 60	4 32. 891		
	Weisse XXII, 518	43. 9	54. 9	5. 6	53 54. 80	5 33. 945	+ 0 26. 10	+ 17. 959
	Comet	- -	20. 9	- -	54 20. 90	4 33. 052		

RESULTS.

Corr. Chron. + 4 13.45 (m. s.)

	α (h. m. s.)	δ (° ′ ″)
Weisse XXII, 1159,	22 55 19.45	+11 47 47.23

Comet—Weisse XXII, 1159,

		△α (m. s.)	△δ (′ ″)
Sid. T.	1 24 10.75	+ 0 43.43	—10 16.87
	Δρ	.00	— .24
	p	+ .30	+ 4.47

Corr. Chron. + 2 2.41 (m. s.)

	α (h. m. s.)	δ (° ′ ″)
Weisse XXII, 658,	22 31 32.98	+ 8 32 32.35

Comet—Weisse XXII, 658,

		△α (m. s.)	△δ (′ ″)
Sid. T.	0 39 37.34	+ 2 39.43	— 7 10.38
	Δρ	.00	— .18
	p	+ .25	+ 4.65

Corr. Chron. + 1 43.76 (m. s.)

	α (h. m. s.)	δ (° ′ ″)
Weisse XXII, 601,	22 29 15.94	+ 7 33 34.84

Comet—Weisse XXII, 601,

		△α (m. s.)	△δ (′ ″)
Sid. T.	23 56 54.43	— 0 20.98	+ 5 16.63
	Δρ	.00	.13
	p	+ .18	+ 4.78

Corr. Chron. + 1 24.72 (m. s.)

	α (h. m. s.)	δ (° ′ ″)
Weisse XXII, 518,	22 25 9.04	+ 6 41 48.35

Comet—Weisse XXII, 518,

		△α (m. s.)	△δ (′ ″)
Sid. T.	0 22 7.06	+ 0 27.25	+ 4 45.35
	Δρ	.00	.12
	p	+ .23	+ 4.92

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ENCKE'S COMET.

DATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT. A.	B.	C.	Mean.	MIC.	COMET—STAR. Δα	Δ mic.
		s.	s.	s.	h. m. s.	w. revs.	m. s.	revs.
1861. Dec. 3	Comet - - - -	43.7	54.9	- -	1 15 54.9	2 28.158		
	(✡ 110) W. - - - -	- -	17.8	28.6	16 17.8	1 32.548	— 0 22.90	— 55.571
	Comet - - - -	51.1	2.4	13.2	23 2.23	5 28.309		
	(✡ 110) W. - - - -	- -	26.0	37.0	23 25.93	1 32.398	0 23.70	55.972
	Comet - - - -	8.2	- -	31.3	28 19.75	5 28.438		
	(✡ 110) W. - - - -	- -	43.8	54.4	28 43.80	1 32.338	0 24.05	56.061
	Comet - - - -	- -	44.5	55.2	38 44.50	5 28.110		
	(✡ 110) W. - - - -	- -	9.0	20.0	39 9.15	1 32.038	0 24.65	56.033
	Comet - - - -	16.1	- -	39.1	47 27.60	5 27.958		
	(✡ 110) W. - - - -	- -	52.4	3.3	47 52.40	1 31.765	— 0 24.80	— 56.154
4	Weisse XXII, 379 -	39.0	49.9	0.6	0 19 49.83	4 37.354	+ 4 43.14	— 2.176
	Comet - - - -	21.6	32.9	44.4	24 32.97	4 39.530		
	Weisse XXII, 379 -	6.7	17.8	28.7	27 17.73	4 37.322	4 43.20	2.258
	Comet - - - -	50.0	1.4	11.4	32 0.93	4 39.580		
	Weisse XXII, 379 -	38.1	49.2	59.8	35 49.03	4 37.285	4 42.47	2.226
	Comet - - - -	20.8	31.7	42.0	40 31.50	4 39.511		
	Weisse XXII, 379 -	37.4	48.4	59.4	42 48.40	4 37.325	4 43.07	2.267
	Comet - - - -	20.4	31.6	42.4	47 31.47	4 39.592		
	Weisse XXII, 379 -	5.1	15.9	26.8	51 15.93	4 37.398	4 42.04	2.512
	Comet - - - -	46.9	57.9	9.1	55 57.97	4 39.910		
	Weisse XXII, 379 -	58.0	9.0	19.2	58 8.73	4 37.300	4 41.70	2.468
	Comet - - - -	39.7	50.6	1.0	2 50.43	4 39.768		
	Weisse XXII, 379 -	26.7	37.7	48.2	4 37.53	4 37.211	4 42.27	2.517
	Comet - - - -	8.7	19.7	31.0	9 19.80	4 39.728		
	Weisse XXII, 379 -	52.9	3.9	14.7	12 3.83	4 37.322	4 40.95	2.968
	Comet - - - -	33.9	44.7	57.2	16 44.78	4 40.290		
	Weisse XXII, 379 -	40.9	51.9	2.9	19 51.90	4 37.160	4 41.93	3.110
	Comet - - - -	22.9	34.7	43.9	24 33.83	4 40.270		
	Weisse XXII, 379 -	23.4	34.2	45.3	26 34.30	4 37.110	+ 4 40.97	— 3.759
	Comet - - - -	4.4	15.3	26.1	31 15.27	4 40.869		
5	Weisse XXII, 379 -	29.0	39.9	50.9	23 43 39.93	2 40.881	+ 4 10.97	— 36.268
	Comet - - - -	- -	50.9	3.9	47 50.90	5 34.191		
	Weisse XXII, 379 -	5.4	15.9	26.9	50 16.07	2 40.569	4 12.13	36.665
	Comet - - - -	- -	28.2	39.6	54 28.20	5 34.276		
	Weisse XXII, 379 -	23.6	34.2	44.9	56 34.23	2 40.405	4 11.97	36.884
	Comet - - - -	34.8	46.0	57.8	0 0 46.20	5 34.331		
	Weisse XXII, 379 -	48.9	59.6	10.3	2 59.27	2 40.150	4 11.86	37.236
	Comet - - - -	0.0	11.2	22.2	7 11.13	5 34.428		
	Weisse XXII, 379 -	58.6	9.3	20.0	9 9.30	2 39.998	4 11.20	37.090
	Comet - - - -	- -	20.2	31.5	13 20.50	5 34.130		
	Weisse XXII, 379 -	51.6	2.5	13.4	15 2.50	2 39.920	+ 4 11.40	— 37.208
	Comet - - - -	- -	13.7	25.0	19 13.90	5 34.170		
19	Weisse XXII, 358 -	34.3	44.9	55.7	0 57 44.97	4 40.446	+ 0 50.30	— 3.035
	Comet - - - -	24.8	34.8	46.2	58 35.27	4 43.481		

RESULTS.

Corr. Chron. m. s. + 0 53.46

	α h. m. s.	δ ° ′ ″
(✡ 110) W.,	22 23 57.88	+ 6 32 0.65

Comet—(✡ 110) W.,

		△α m. s.	△δ ′ ″
Sid. T.	1 31 35.26	— 0 24.02	—14 20.04
	Δρ	+ .01	— .45
	p	+ .35	+ 5.16

Corr. Chron. m. s. + 0 45.81

	α h. m. s.	δ ° ′ ″
Weisse XXII, 379,	22 18 15.30	+ 6 9 38.81

Comet—Weisse XXII, 379,

		△α m. s.	△δ ′ ″
Sid. T.	0 59 17.70	+ 4 42.17	— 0 40.36
	Δρ	.00	— .02
	p	+ .30	+ 5.07

Corr. Chron. m. s. + 0 37.56

	α h. m. s.	δ ° ′ ″
Weisse XXII, 379,	22 18 15.29	+ 6 9 39.03

Comet—Weisse XXII, 379,

		△α m. s.	△δ m. s.
Sid. T.	0 4 27.13	+ 4 11.59	— 9 27.01
	Δρ	.00	— .24
	p	+ .21	+ 4.98

(Continued.)

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ENCKE'S COMET.

DATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT. A.	B.	C.	Mean.	MIC.	COMET—STAR. Δ α	Δ mic.
		s.	s.	s.	h. m. s.	w. revs.	m. s.	revs
1861. Dec. 19	Weisse XXII, 358	14.2	24.7	35.4	1 2 24.70	4 40.355	+ 0 51.27	— 2.705
	Comet	4.8	15.9	27.2	3 15.97	4 43.060		
	Weisse XXII, 358	18.7	29.6	40.4	5 29.57	4 40.359	0 50.76	2.981
	Comet	9.4	20.2	31.4	6 20.33	4 43.340		
	Weisse XXII, 358	4.9	16.2	27.0	9 16.03	4 40.238	0 50.87	2.932
	Comet	55.9	6.8	18.0	10 6.90	4 43.170		
	Weisse XXII, 358	52.3	3.4	13.9	12 3.20	4 40.009	0 50.73	2.832
	Comet	43.2	53.9	4.7	12 53.93	4 42.841		
	Weisse XXII, 358	5.7	16.8	27.8	16 16.77	4 40.191	0 50.85	2.650
	Comet	56.8	7.4	18.7	17 7.62	4 42.841		
	Weisse XXII, 358	29.5	40.6	51.4	19 40.50	4 40.311	0 50.60	2.514
	Comet	20.0	31.0	42.3	20 31.10	4 42.825		
	Weisse XXII, 358	20.4	31.6	42.4	23 31.47	4 40.200	0 50.80	2.732
	Comet	11.2	22.6	33.0	24 22.27	4 42.932		
	Weisse XXII, 358	4.2	15.4	25.9	29 15.17	4 40.041	0 50.93	2.621
	Comet	55.2	6.3	16.8	30 6.10	4 42.662		
	Weisse XXII, 358	46.4	57.4	7.9	32 57.23	4 40.136	0 50.47	2.862
	Comet	36.7	- -	58.7	33 47.70	4 42.998		
	Weisse XXII, 358	13.2	24.3	35.2	38 24.23	4 39.860	0 51.14	2.685
	Comet	4.2	15.1	26.8	39 15.37	4 42.545		
	Weisse XXII, 358	21.7	32.6	43.2	42 32.50	4 39.952	+ 0 50.93	— 2.776
	Comet	12.4	23.0	34.9	43 23.43	4 42.728		
21	Comet	24.1	36.0	45.3	1 26 35.13	2 37.320		
	(✲ 9)	- -	- -	55.2	27 45.03	4 37.185		
	(✲ 9)	- -	40.4	51.2	28 40.28	3 33.612		
	7827, B. A. C.	- -	- -	36.0	29 25.93	5 29.918	— 2 50.80	+ 35.556
	Comet	7.8	17.8	29.9	33 18.50	2 37.200		
	7827, B. A. C.	58.4	9.3	20.0	36 9.23	5 29.971	2 50.73	35.729
	Comet	27.5	38.2	49.3	38 38.33	2 37.440		
	7827, B. A. C.	18.0	28.7	39.2	41 28.63	5 29.710	2 50.30	35.228
	Comet	8.9	20.6	31.3	43 20.27	2 38.119		
	7827, B. A. C.	59.3	10.2	21.0	46 10.17	5 29.445	2 49.90	34.284
	Comet	58.2	8.4	20.0	51 8.87	2 37.971		
	7827, B. A. C.	- -	59.5	10.1	53 59.47	5 29.445	2 50.60	34.432
	Comet	5.8	17.4	28.0	56 17.07	2 37.601		
	7827, B. A. C.	56.6	7.5	18.4	59 7.50	5 29.350	2 50.43	34.707
	Comet	8.2	18.8	30.4	2 9 19.13	2 37.115		
	7827, B. A. C.	58.9	9.7	20.3	12 9.63	5 28.581	2 50.50	34.424
	Comet	22.2	33.2	43.8	15 33.07	2 36.800		
	7827, B. A. C.	12.9	23.9	34.6	18 23.80	5 28.295	2 50.73	34.453
	Comet	16.6	27.2	37.7	21 27.17	2 36.902		
	7827, B. A. C.	6.9	17.6	28.5	24 17.67	5 27.702	2 50.50	33.758
	Comet	25.2	36.8	47.8	26 36.60	2 36.891		
	7827, B. A. C.	16.9	27.3	38.0	29 27.40	5 27.699	— 2 50.80	+ 33.766
24	Comet	24.3	34.4	44.0	1 6 34.23	3 41.892		
	7827, B. A. C.	26.0	37.0	47.9	9 36.97	1 41.532	— 3 2.74	— 30.221
	Comet	52.4	4.6	15.8	14 4.27	3 42.462		
	7827, B. A. C.	56.9	7.4	18.3	17 7.53	1 41.416	— 3 3.26	— 30.907

RESULTS.

m. s.
Corr. Chron. — 0 21.82

	α h. m. s.	δ ° ′ ″
Weisse XXII, 528,	22 17 23.96	+ 4 21 58.26

Comet—Weisse XXII, 528,

		△α m. s.	△δ ′ ″
Sid. T.	1 19 37.01	+ 0 50.80	— 0 42.68
	Δρ	.00	— .02
	p +	.34	+ 5.40

m. s.
Corr. Chron. — 0 28.49

	α h. m. s.	δ ° ′ ″
7827, B. A. C.,	22 20 52.99	+ 4 0 26.07

Comet—7827, B. A. C.,

		△α m. s.	△δ ′ ″
Sid. T.	1 55 44.92	— 2 50.53	+ 8 52.30
	Δρ —	.01	+ .35
	p +	.40	+ 5.50

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ENCKE'S COMET.

DATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT. A.	B.	C.	Mean.	MIC.	COMET—STAR. Δ α	Δ mic.
1861.		s.	s.	s.	h. m. s.	w. revs.	m. s.	revs.
Dec. 24	Comet - - - -	11.2	22.3	32.9	1 19 22.13	3 42.242		
	7827, B. A. C. - -	14.2	24.7	35.8	22 24.90	1 41.338	— 3 2.77	— 30.765
	Comet - - - -	6.1	16.7	27.7	24 16.83	3 42.549		
	7827, B. A. C. - -	9.6	20.4	30.9	27 20.30	1 41.133	3 5.47	31.277
	Comet - - - -	9.7	20.3	31.8	37 20.60	3 42.069		
	7827, B. A. C. - -	13.3	23.9	34.6	40 23.93	1 40.978	3 3.33	30.952
	Comet - - - -	11.5	22.6	33.2	53 22.43	3 41.929		
	7827, B. A. C. - -	15.0	25.8	36.4	56 25.73	1 40.361	3 3.30	31.429
	Comet - - - -	49.4	1.1	11.9	58 0.80	3 42.061		
	7827, B. A. C. - -	53.8	4.6	15.3	2 1 4.57	1 40.200	3 3.77	31.722
	Comet - - - -	35.4	46.4	56.9	12 46.23	3 41.992		
	7827, B. A. C. - -	39.0	49.9	0.2	15 49.70	1 39.472	3 3.47	32.381
	Comet - - - -	5.9	16.6	26.4	19 16.30	3 40.942		
	7827, B. A. C. - -	9.0	20.0	30.8	22 19.93	1 39.170	3 3.63	31.633
	Comet - - - -	7.3	18.8	29.9	28 18.67	3 40.720		
	7827, B. A. C. - -	11.2	22.0	32.8	31 22.00	1 38.570	— 3 3.33	— 32.011
25	Comet - - - -	8.3	19.0	30.6	1 45 19.30	5 34.845		
	7827, B. A. C. - -	15.6	26.3	37.0	48 26.30	1 40.740	— 3 7.00	— 54.066
	Comet - - - -	53.0	2.9	13.5	2 1 3.13	5 34.316		
	7827, B. A. C. - -	59.9	9.9	20.6	4 9.97	1 40.319	3 6.84	53.958
	Comet - - - -	6.6	16.4	28.7	6 17.23	5 34.461		
	7827, B. A. C. - -	13.8	24.4	35.4	9 24.53	1 40.050	3 7.30	54.372
	Comet - - - -	8.6	19.4	30.5	12 19.50	5 33.670		
	7827, B. A. C. - -	15.3	26.0	37.1	15 26.13	1 39.700	3 6.63	53.931
	Comet - - - -	47.0	58.3	9.0	17 58.10	5 33.625		
	7827, B. A. C. - -	54.0	4.7	15.4	21 4.70	1 39.449	3 6.60	54.137
	Comet - - - -	45.3	56.9	7.2	24 56.47	5 33.398		
	7827, B. A. C. - -	52.0	2.9	13.5	28 2.80	1 39.158	— 3 6.33	— 54.201
27	Comet - - - -	38.6	49.7	0.6	2 52 49.63	4 31.042		
	7823, B. A. C. - -	35.6	46.3	57.2	54 46.37	2 31.641	— 1 56.74	— 25.374
	Comet - - - -	40.9	51.0	1.7	55 51.20	4 30.762		
	7823, B. A. C. - -	36.5	47.4	57.9	57 47.27	2 31.310	1 56.07	25.345
	Comet - - - -	2.8	13.2	23.7	59 13.13	4 30.632		
	7823, B. A. C. - -	58.5	9.2	20.0	3 1 9.23	2 30.960	1 56.10	25.565
	Comet - - - -	57.4	9.2	19.1	2 8.57	4 30.152		
	7823, B. A. C. - -	53.7	4.9	15.6	4 4.73	2 30.622	1 56.16	25.423
	Comet - - - -	55.7	5.9	16.2	5 5.93	4 30.218		
	7823, B. A. C. - -	50.8	1.7	12.3	7 1.60	2 30.298	1 55.67	25.813
	Comet - - - -	1.6	12.1	22.7	8 12.13	4 29.458		
	7823, B. A. C. - -	57.4	8.2	18.7	10 8.10	2 29.925	1 55.97	25.426
	Comet - - - -	5.7	16.7	27.4	11 16.60	4 29.209		
	7823, B. A. C. - -	1.8	12.2	23.2	13 12.40	2 29.683	1 55.80	25.419
	Comet - - - -	7.1	18.2	29.2	14 18.17	4 28.862		
	7823, B. A. C. - -	3.8	14.7	25.4	16 14.63	2 29.285	1 56.46	25.470
	Comet - - - -	11.9	22.7	33.0	17 22.53	4 28.221		
	7823, B. A. C. - -	7.7	17.9	28.8	19 18.13	2 28.619	— 1 55.60	— 25.495

RESULTS.

Corr. Chron. — 0 m. 27.67 s.

	α h. m. s.	δ ° ′ ″
7827, B. A. C.,	22 20 52.96	+ 4 0 25.82

Encke's Comet—7827, B. A. C.,

		Δα m. s.	Δδ ′ ″
Sid. T.	1 50 42.56	— 3 3.51	— 8 1.52
	Δρ	— .01	— .31
	p	+ .39	+ 5.59

Corr. Chron. — 0 m. 27.46 s.

	α h. m. s.	δ ° ′ ″
7827, B. A. C.,	22 20 52.94	+ 4 0 25.74

Encke's Comet—7827, B. A. C.,

		Δα m. s.	Δδ ′ ″
Sid. T.	2 7 31.49	— 3 6.78	+13 51.67
	Δρ	— .03	— .60
	p	+ .41	+ 5.65

Corr. Chron. — 0 m. 26.99 s.

	α h. m. s.	δ ° ′ ″
7823, B. A. C.,	22 19 36.11	+ 3 41 34.45

Encke's Comet—7823, B. A. C.,

		Δα m. s.	Δδ ′ ″
Sid. T.	3 7 17.05	— 1 56.13	— 6 31.42
	Δρ	— .03	— .53
	p	+ .48	+ 5.79

(Continued.)

ENCKE'S COMET.

DATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT. A.	B.	C.	Mean.	MIC.	COMET—STAR. Δ α	Δ mic.
1861.		s.	s.	s.	h. m. s.	w. revs.	m. s.	revs.
Dec. 27	Comet - - - -	51.7	2.7	13.0	3 31 2.47	4 27.025		
	7825, B. A. C. - -	48.4	59.3	10.0	32 59.23	2 27.578	— 1 56.76	— 25.340
30	(✡ 111) W. - - -	37.9	48.9	59.6	1 48 48.80	1 40.448	+ 0 32.07	— 22.342
	Comet - - - -	10.3	20.7	31.6	49 20.87	3 32.929		
	(✡ 111) W. - - -	14.0	24.8	35.7	51 24.83	1 40.350	0 32.04	22.275
	Comet - - - -	46.1	56.8	7.7	51 56.87	2 45.622		
	(✡ 111) W. - - -	4.0	14.8	25.8	55 14.87	1 40.113	0 31.63	22.559
	Comet - - - -	35.9	46.2	57.4	55 46.50	2 45.669		
	(✡ 111) W. - - -	19.0	29.7	40.5	57 29.73	1 40.220	0 32.24	22.273
	Comet - - - -	51.0	2.3	12.6	58 1.97	2 45.490		
	(✡ 111) W. - - -	22.9	34.2	44.6	2 0 33.90	1 40.041	0 32.10	22.225
	Comet - - - -	55.0	6.2	16.8	1 6.00	2 45.263		
	(✡ 111) W. - - -	38.0	48.8	59.7	2 48.83	1 39.800	0 31.80	22.372
	Comet - - - -	9.8	20.7	31.4	3 20.63	2 45.169		
	(✡ 111) W. - - -	49.4	0.4	10.9	5 0.23	1 39.770	0 31.74	22.484
	Comet - - - -	21.3	32.0	42.6	5 31.97	2 45.251		
	(✡ 111) W. - - -	45.0	55.9	6.7	7 55.87	1 39.841	0 32.00	22.232
	Comet - - - -	17.4	27.9	38.3	8 27.87	2 45.070		
	(✡ 111) W. - - -	53.2	3.8	14.6	12 3.87	1 39.643	0 31.90	22.362
	Comet - - - -	24.9	36.0	46.4	12 35.77	2 45.002		
	(✡ 111) W. - - -	20.5	31.8	42.6	14 31.63	1 39.350	0 31.70	22.720
	Comet - - - -	52.7	3.1	14.2	15 3.33	2 45.067		
	(✡ 111) W. - - -	14.6	25.3	36.2	20 25.37	1 39.466	0 31.56	22.876
	Comet - - - -	46.4	57.2	8.4	20 57.33	2 45.339		
	(✡ 111) W. - - -	28.0	38.8	49.4	22 38.73	1 38.916	0 31.80	22.568
	Comet - - - -	59.8	10.8	21.0	23 10.53	2 44.481		
	(✡ 111) W. - - -	50.2	0.9	11.6	25 0.90	1 38.762	+ 0 31.40	— 23.041
	Comet - - - -	21.8	32.0	43.1	25 32.30	2 44.800		
31	Comet - - - -	1.2	11.8	22.8	2 29 11.93	2 40.160		
	Weisse XXII, 360 -	3.9	15.4	26.4	29 15.23	3 41.449	— 0 3.30	+ 14.147
	Comet - - - -	58.0	9.2	19.4	31 8.87	2 39.978		
	Weisse XXII, 360 -	1.6	12.4	23.2	31 12.40	3 41.104	0 3.53	13.984
	Comet - - - -	2.4	13.4	23.9	33 13.23	2 39.820		
	Weisse XXII, 360 -	5.6	16.6	27.4	33 16.53	3 41.248	0 3.30	14.286
	Comet - - - -	49.0	59.8	10.6	34 59.80	2 40.092		
	Weisse XXII, 360 -	52.7	3.4	14.3	35 3.47	3 41.018	0 3.67	13.784
	Comet - - - -	58.2	9.2	19.9	38 7.10	2 39.769		
	Weisse XXII, 360 -	1.7	12.4	23.0	38 12.37	3 40.812	0 3.27	13.901
	Comet - - - -	43.4	53.8	5.1	40 54.10	2 39.475		
	Weisse XXII, 360 -	46.7	57.2	8.1	40 57.33	3 40.635	0 3.23	14.018
	Comet - - - -	39.9	50.4	1.2	42 50.50	2 39.060		
	Weisse XXII, 360 -	42.8	53.8	4.2	42 53.60	3 40.578	0 3.10	14.376
	Comet - - - -	27.2	37.9	48.2	44 37.77	2 39.010		
	Weisse XXII, 360 -	30.5	41.0	51.7	44 41.07	3 40.299	0 3.30	14.147
	Comet - - - -	16.2	27.2	37.9	48 27.10	2 38.988		
	Weisse XXII, 360 -	19.5	30.6	41.2	48 30.43	3 40.041	0 3.33	13.911
	Comet - - - -	22.8	34.2	44.2	56 33.73	2 38.605		
	Weisse XXII, 360 -	26.7	37.5	48.2	56 37.47	3 39.511	0 3.74	13.774
	Comet - - - -	10.2	21.6	31.8	58 21.20	2 38.372		
	Weisse XXII, 360 -	14.0	24.9	35.7	58 24.87	3 39.178	0 3.67	13.664
	Comet - - - -	54.2	5.2	15.3	3 0 4.90	2 38.122		
	Weisse XXII, 360 -	57.8	8.8	19.2	0 8.60	3 39.035	0 3.70	13.771
	Comet - - - -	9.7	20.7	31.7	4 20.70	2 37.703		
	Weisse XXII, 360 -	13.7	24.6	35.4	4.24.57	3 38.729	— 0 3.87	+ 13.884

RESULTS.

Corr. Chron. — 0 m. 31.14 s.

	α (h. m. s.)	δ (° ′ ″)
(✡ 111) W.,	22 16 57.69	+ 3 23 22.04

Comet—(✡ 111) W.,

	h. m. s.	Δα (m. s.)	Δδ (′ ″)
Sid. T.	2 6 28.24	+ 0 31.85	— 5 45.62
		Δρ — .01	— .26
		ρ + .43	+ 5.85

Corr. Chron. — 0 m. 33.81 s.

	α (h. m. s.)	δ (° ′ ″)
Weisse XXII, 360,	22 17 28.77	+ 3 7 31.68

Comet—Weisse XXII, 360,

	h. m. s.	Δα (m. s.)	Δδ (′ ″)
Sid. T.	2 41 11.80	— 0 3.48	+ 3 34.76
		Δρ + .03	.47
		ρ + .47	+ 5.96

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ASPECTS OF ENCKE'S COMET.

Encke's comet was not seen at this Observatory until the 29th of October, and then so faintly that no measurement with the micrometer was attempted. It had been looked for on the nights of the 23d, 24th, and 28th, without success. It was visible again on the 31st, as a small nebulæ, too faint to submit to any measurement. On the 4th of November, the night being fine for observing large stars, but somewhat hazy, the comet appeared as a small nebulous star, the coma showing in irregular pulsations. On the 9th of November the first comparison was made with Weisse XXII, 1159, the comet disappearing as the Moon rose and before a second measure could be taken. The following notes, made at the time of the subsequent observations, are copied from the hand-book of the observer:

NOVEMBER 26.—The comet very faint, shows like a pearly colored cloud, the densest part being at the north end. It is, judging from recollection, fainter than when first seen in 1852.

NOVEMBER 30.—The comet extremely faint, not bearing any illumination, and showing merely as a slight discoloration upon the darker sky. It is more distinct than at the previous observations, but the comparisons must still be taken as approximations only.

DECEMBER 1.—The comet no brighter than at the last observation.

DECEMBER 4.—The comet showing like a white cloud. The densest part taken.

DECEMBER 5.—The comet fainter than on the 4th. The densest part of the cloud observed for the place of the nucleus.

DECEMBER 19.—No change in the general appearance of the comet. The observations of the night better than any other taken here during this appearance of the comet.

DECEMBER 21, 24, AND 25.—No change in appearance; the nights being cold and unfavorable. During the two last observations the light of the comet was more uncertain and pulsating.

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OCCULTATIONS OF STARS BY THE MOON.

DATE.	OBJECTS.	PHASE.	SIDEREAL TIME.	MEAN TIME.	REMARKS.
1861.			h. m. s.	h. m. s.	
Aug. 24	16 Piscium	Immersion	21 17 41.33		
		Emersion	22 29 55.38	12 16 4.42	
Sept. 22	47 Arietis	Immersion	- - - -	11 49 59.77	
		Emersion	- - - -	13 11 40.99	
Oct. 23	2 Geminorum	Immersion	- - - -	- - - -	Not visible.
		Emersion	0 33 4.35	10 22 58.76	
Dec. 5	7097, B. A. C.	Emersion	23 8 19.42		
13	47 Arietis	Immersion	0 34 5.34	7 3 28.16	
		Emersion	1 58 47.93	- - - -	Uncertain.
18	56 Geminorum	Immersion	1 30 55.05	- - - -	Uncertain.
		Emersion	2 24 7.72	8 33 33.36	

ECLIPSE OF THE SUN, DECEMBER 30.

	h. m. s.
Mean time of last contact, as observed by Capt. Gilliss with the Comet-seeker	20 35 38.31
Sidereal time of last contact, as observed by Mr. Ferguson with the Equatorial	15 15 10.53

During quite half an hour the body of the Moon was distinctly perceptible two or three minutes beyond the limb of the Sun, and was of a bluish black color.

Just before the eclipse terminated a thin cloudy film passed over the disc of the Sun, causing its limb at the separation of the objects to appear somewhat serrated, and rendering the instant of that occurrence somewhat doubtful.

The occultation of September 22 was observed by Capt. Gilliss, the others by Mr. Ferguson.

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MEAN RIGHT ASCENSIONS

OF

STARS OBSERVED FOR 1860·0

WITH THE

TRANSIT INSTRUMENT,

1861.

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Weisse XXIII, 1242.

1861.	h.	m.	s.
November 21	0	0	38.78
December 3			38.83

Lacaille, 9735.

September 17	0	0	56.12

α Andromedæ.

November 8	0	1	9.(19)
11			9.32
18			9.31
December 6			9.27
11			9.37
13			9.32
16			9.34
19			9.31
25			9.35

Lacaille, 9737.

October 24	0	1	39.00

Weisse XXIII, 1267.

October 29	0	1	41.95

Weisse XXIII, 1269.

July 25	0	1	45.08
September 18			45.00
November 26			45.03

Lacaille, 9738.

October 4	0	1	45.25

Weisse, O. 4.

July 25	0	1	57.91
September 18			57.91
November 26			57.73

(✡ 8) + 11° 48′.

September 18	0	2	41.16
19			41.19

Weisse, O. 59.

October 13	0	4	7.01
December 13			7.16

B. A. C., 23.

September 17	0	4	27.43

Weisse, O. 69.

October 18	0	4	36.54
28			36.47
29			36.57
December 13			36.45

(✡ 9) — 12° 7′.

November 21	0	4	44.27

Lacaille, 9766.

1861.	h.	m.	s.
October 4	0	5	29.67

γ Pegasi.

July 25	0	6	1.79
26			1.70
August 23			1.71
September 20			1.77
October 14			1.66
24			1.77
31			1.68
November 5			1.76
19			1.79
December 3			1.74

Weisse, O. 110.

November 7	0	7	18.43

35¹ Piscium.

September 18	0	7	46.34
19			46.25
October 18			46.25
December 6			46.25
9			46.21

35² Piscium.

September 18	0	7	46.74
19			46.69
December 9			46.58

Lacaille, 17.

September 17	0	7	48.67

B. A. C., 43.

October 4	0	9	3.63

Weisse, O. 172.

November 26	0	10	38.81

(✡ 9) — 6° 59′.

November 26	0	10	39.37

Lacaille, 37.

September 17	0	11	37.79

Weisse, O. 196.

October 31	0	12	8.34
November 7			8.21
December 28			8.24

Weisse, O. 202.

November 11	0	12	39.48
December 6			39.41

Weisse, O. 212.

October 31	0	12	58.56
December 28			58.47

d Piscium.

1861.	h.	m.	s.
August 23	0	13	23.66
September 19			23.74
December 9			23.60

Weisse, O. 229.

September 20	0	13	45.86
November 11			45.87
18			45.89
December 6			45.77

Weisse, O. 233.

September 20	0	13	57.91
November 11			57.98
18			57(.54)
December 6			57.90

Weisse, O. 239.

November 21	0	14	14.23

Lacaille, 55.

October 4	0	14	47.25

Weisse, O. 236.

November 16	0	15	5.69

Radcliffe, 79.

December 16	0	15	7.03

B. A. C., 77.

September 17	0	16	11.80

45 Piscium.

August 23	0	18	28.96
November 8			28.83
11			28.95

Lacaille, 84.

October 4	0	18	56.68

(✡ 7) + 3° 9′.

November 21	0	19	26.63

Groombridge, 64.

December 18	0	19	39.29

Groombridge, 67.

September 18	0	22	53.71
October 31			51.80
November 30			52.44
December 3			52.12
5			51.86
6			51.26

12 Ceti.

1861.	h.	m.	s.
July 26	0	22	53.77
September 17			53.69
19			53.60
20			53.66
October 4			53.65
18			53.70
24			53.68
29			53.65
November 7			53.69
11			53.68
18			53.66
19			53.60
21			53.67
26			53.64
December 25			53.62
28			53.69

Groombridge, 73.

December 18	0	23	31.37

κ Cassiopeiæ.

August 23	0	25	3.98

Lacaille, 121.

November 18	0	25	40.67
December 30			40.61

Groombridge, 89.

December 18	0	26	17.34

Weisse, O. 444.

November 7	0	26	50.99
21			51.11

B. A. C., 137.

September 20	0	26	55.55
November 8			55.39
11			55.60
December 13			55.47

13 Ceti.

October 18	0	28	2.54

Weisse, O. 476.

October 29	0	28	16.20
December 27			16.21
30			16.06

B. A. C., 147.

September 18	0	28	21.71
October 31			21.65

B. A. C., 149.

July 26	0	28	39.83

Lacaille, 142.

December 16	0	29	8.80

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π ANDROMEDÆ.

1861.	h. m. s.
November 13	0 29 24.61

B. A. C., 160.

November 18	0 30 9.13

(✡ 7.8) — 1° 15′.

December 5	0 30 55.07

α^1 CASSIOPELÆ.

December 18	0 32 27.64

α CASSIOPELÆ.

October 30	0 32 34.80
December 6	34.79
18	34.91
25	34.83

LACAILLE, 167.

November 18	0 33 29.70

(✡ 8.9) — 6° 24′.

November 7	0 35 7.77

21 CASSIOPELÆ.

December 24	0 36 28.09
25	27.93

β CETI.

October 28	0 36 33.64
29	33.71
November 8	33.60
December 18	33.59
27	33.60
30	33.56

WEISSE, O. 641.

September 20	0 37 23.41

(✡ 9.10) — 4° 42′.

December 11	0 37 32.85

B. A. C., 203.

September 19	0 37 48.58

(✡ 9.10) — 4° 32′.

December 11	0 38 3.65

(✡ 9.10) — 4° 33′.

December 11	0 38 5.92

23 CASSIOPELÆ.

December 25	0 38 28.75

LACAILLE, 203.

1861.	h. m. s.
October 24	0 39 14.24

ζ ANDROMEDÆ.

August 23	0 39 55.33

WEISSE, O. 704.

November 7	0 40 55.16

WEISSE, O. 706.

November 21	0 40 58.34

LACAILLE, 218.

November 8	0 41 5.23
December 30	5.14

GROOMBRIDGE, 148.

December 18	0 41 7.51

WEISSE, O. 711.

November 21	0 41 8.67

δ PISCIUM.

July 26	0 41 25.25
September 19	25.26
20	25.24

B. A. C., 230.

October 29	0 42 23.62

LACAILLE, 224.

October 24	0 42 39.84
November 15	39.58

LACAILLE, 238.

November 18	0 45 48.20
December 11	48.12

(✡ 9) — 1° 33′.

November 19	0 46 13.58

LACAILLE, 241.

September 19	0 46 20.15

B. A. C., 240.

August 24	0 46 29.27
October 31	26.60
November 26	31.15
30	28.69
December 3	30.69
5	28.99
7	28.44
23 S. P.	28.26
24	29.01
25	30.91
28	28.99
31	30.01

υ^1 CASSIOPELÆ.

1861.	h. m. s.
September 20	0 46 42.99

(✡ 9.10) — 1° 33′.

November 19	0 48 23.96

LACAILLE, 252.

October 24	0 48 31.55

WEISSE, O. 820.

October 29	0 48 37.10
November 11	37.11
19	37.16

LACAILLE, 256.

September 19	0 49 7.94

(✡ 9) + 2° 1′.

October 29	0 49 58.48

2 URSÆ MINORIS.

December 25	0 50 16.18

B. A. C., 269.

November 13	0 50 33.99
December 11	33.87

α SCULPTORIS.

September 19	0 51 51.36

B. A. C., 286.

November 19	0 55 12.40

ε PISCIUM.

July 26	0 55 40.75
August 23	40.72
24	40.76
September 19	40.80
20	40.75
October 18	40.68
November 13	40.71
December 11	40.78

GROOMBRIDGE, 227.

December 18	0 55 57.64

RADCLIFFE, 317.

December 18	0 56 0.22

GROOMBRIDGE, 229.

December 18	0 56 6.58

(✡ 6.7) — 24° 45′.

September 19	0 59 20.76

WEISSE, O. 1076.

1861.	h. m. s.
September 20	1 1 3.56
November 26	3.43

e PISCIUM.

October 18	1 1 9.48
December 4	9.55
6	9.50

WEISSE, O. 1079.

September 20	1 1 11.05
November 26	10.99

LACAILLE, 319.

November 8	1 3 20.25
11	20.21
December 16	20.17
30	20.11

LAMONT, 3059.

November 21	1 3 47.50

35 CETI.

November 13	1 5 20.11
December 4	19.95
6	19.98

(✡ 8.9) + 48° 2′.

December 18	1 5 34.84

WEISSE I, 89.

December 14	1 5 58.94

WEISSE I, 100.

October 31	1 7 31.45
November 7	31.49
11	31.55
December 16	31.57

38 CETI.

November 21	1 7 40.36
December 28	40.29
30	40.28

WEISSE I, 113.

October 31	1 8 27.48
November 11	27.33
December 16	27.48

WEISSE I, 138.

December 30	1 9 57.76

42 CETI.

December 14	1 12 38.86

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WEISSE I, 197.

1861.		h. m. s.
November	11	1 13 7.39
	15	7.21
	21	7.45
December	6	7.40
	16	7.43

WEISSE I, 202.

October	31	1 13 28.16
November	7	28.23

WEISSE I, 206.

December	3	1 13 44.32
	28	44.23
	30	44.16

δ CASSIOPEIÆ.

December	13	1 16 41.15

θ^1 CETI.

August	23	1 17 1.58
	25	1.62
September	19	1.56
October	18	1.54
	23	1.69
	24	1.53
	29	1.52
November	8	1.59
	11	1.65
	16	1.62
	18	1.58
	19	1.54
	21	1.56
December	3	1.60
	5	1.58
	7	1.54
	11	1.68
	14	1.55
	25	1.65
	30	1.56
	31	1.53

WEISSE I, 281.

November	4	1 17 42.07

WEISSE I, 299.

October	31	1 18 35.95
November	7	35.81
	21	35.96

ρ PISCIUM.

December	11	1 18 42.82
	12	42.61

94 PISCIUM.

December	11	1 19 8.31

WEISSE I, 336.

December	28	1 20 24.12

LACAILLE, 416.

September	19	1 21 9.78

μ PISCIUM.

1861.		h. m. s.
October	18	1 22 51.07

WEISSE I, 382.

November	4	1 22 55.36
December	28	55.29

η PISCIUM.

August	23	1 23 59.75
	24	59.76
September	20	59.76
October	18	59.77
	23	59.60
	29	59.72
November	19	59.72

LACAILLE, 435.

September	19	1 25 20.71

WEISSE I, 441.

December	31	1 26 0.90

B. A. C., 479.

September	19	1 28 27.62

π PISCIUM.

August	24	1 29 40.82
October	18	40.83
November	13	40.85

(✡ 9) + 1° 52′

December	31	1 30 2.16

SANTINI, 91.

December	31	1 31 6.47

WEISSE I, 539.

November	21	1 31 44.52
December	28	44.37

LACAILLE, 477.

September	19	1 32 16.40

(✡ 9) + 13° 46′.

December	16	1 32 42.88

(✡ 9.10) + 13° 49′.

December	16	1 32 51.82

WEISSE I, 569.

November	4	1 32 54.32
	8	54.24
	18	54.24
December	4	54.10
	6	54.04
	11	54.21

(✡ 9.10) — 2° 20′.

1861.		h. m. s.
November	26	1 33 1.69

(✡) + 11° 24′.

November	8	1 33 41.64
December	4	41.68
	6	41.50
	11	41.81

WEISSE I, 598.

December	30	1 33 52.56

WEISSE I, 600.

December	30	1 33 53.80

WEISSE I, 607.

November	11	1 34 4.36
	18	4.63

ν PISCIUM.

August	25	1 34 8.85
October	24	8.79
November	4	8.88
	7	8.87
	13	8.94
	16	8.81
December	12	8.86

WEISSE I, 628.

November	18	1 34 56.14

WEISSE I, 646.

December	28	1 35 46.31

B. A. C., 527.

September	19	1 35 49.15

WEISSE I, 672.

December	11	1 36 53.68

ο PISCIUM.

October	18	1 38 0.20
December	30	0.11

LALANDE, 3237.

November	21	1 38 42.78
December	14	42.86

WEISSE I, 732.

October	31	1 41 6.97
November	8	6.98
	11	7.11

LACAILLE, 527.

November	18	1 42 7.64
December	30	7.53

(✡ 10) + 13° 36′.

1861.		h. m. s.
December	11	1 42 11.92

(✡ 8.9) + 13° 47′.

December	16	1 42 27.73

LALANDE, 3344

November	21	1 42 34.28
December	11	34.14
	16	34.30

(✡ 10) + 13° 39′.

December	11	1 42 48.16

b EGERIA, + 13° 36′.

November	21	1 43 22.84

WEISSE I, 773.

December	14	1 43 30.85
	31	30.84

WEISSE I, 775.

November	8	1 43 43.99
	11	44.04

WEISSE I, 778.

November	4	1 43 44.46

B. A. C., 562.

August	25	1 43 54.90

WEISSE I, 807.

October	31	1 45 31.42
November	8	31.41
	11	31.48

WEISSE I, 821.

November	26	1 46 6.25

ξ PISCIUM.

November	16	1 46 18.49
December	13	18.62
	14	18.53

β ARIETIS.

January	20	1 46 54.67
August	24	54.72
	25	54.62
October	30	54.62
November	4	54.52
	12	54.73
	13	54.72
	18	54.67
December	3	54.68
	5	54.70
	7	54.66
	12	54.70
	17	54.70
	28	54.68

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WEISSE I, 860.

1861.	h m. s.
November 21	1 48 21.12

ι ARIETIS.

August 24	1 49 42.43

58 CETI.

November 26	1 50 52.54
December 3	52.55

47 CASSIOPELÆ.

October 30	1 51 14.17
December 30	13.68

(☿ 10. 11) + 15° 28′.

December 13	1 52 30.97

LALANDE, 3702.

November 18	1 52 54.48

B. A. C., 619.

November 11	1 53 36.02

WEISSE I, 963.

January 20	1 54 23.05
December 3	23.04

WEISSE I, 969.

November 16	1 54 36.24

WEISSE I, 978.

December 19	1 55 10.94
31	10.95

WEISSE I, 984.

October 31	1 55 25.37
November 4	25.54
12	25.32
21	25.48

54 CASSIOPELÆ.

October 30	1 57 7.38
December 30	6.96

WEISSE I, 1042.

November 21	1 58 56.75

WEISSE I, 1043.

November 11	1 59 7.14

α ARIETIS.

1861.	h. m. s.
January 19	1 59 17.23
20	17.25
August 24	17.26
25	17.18
October 30	17.24
November 4	17.22
8	17.18
13	17.27
18	17.26
December 12	17.27
13	17.29
16	17.24

WEISSE I, 1047.

November 11	1 59 20.26
26	20.20

WEISSE I, 1050.

November 26	1 59 20.64

WEISSE I, 1056.

October 31	1 59 30.35
December 11	30.40
18	30.34

(☿ 9) + 3° 6′.

November 12	1 59 46.56
16	46.58

B. A. C., 663.

November 4	2 2 22.57
December 7	22.58

A. Z. N., 145, 126.

January 20	2 2 50.86
November 11	50.58
December 4	50.57

A. Z. N., 153, 111.

December 4	2 3 37.69
6	37.66

GROOMBRIDGE, 466.

November 16	2 4 11.96
21	12.15
December 16	12.03
18	12.06

(☿ 9) PRE. — 28° 52′.

November 18	2 4 14.30

LACAILLE, 649.

November 18	2 4 24.37
December 30	24.43

A. Z N., 55, 49.

December 16	2 4 30.72

η ARIETIS.

1861.	h. m. s.
December 12	2 4 58.17
13	58.18

(☿ 9. 10) + 53° 58′.

December 18	2 5 14.61

A. Z. N., 154, 131.

December 11	2 5 23.31
18	23.14

19 ARIETIS.

December 19	2 5 25.42
31	25.35

WEISSE II, 64.

October 31	2 5 26.71
November 12	26.74
26	26.68

B. A. C., 687.

November 11	2 6 10.61
December 3	10.63
4	10.64
28	10.49

WEISSE II, 102.

November 4	2 7 40.54

RUMKER, 568.

December 7	2 7 42.39
9	42.31
11	42.33

WEISSE II, 112.

January 20	2 8 28.27

B. A. C., 700.

October 30	2 9 16.09

B. A. C., 701.

October 30	2 9 25.19

67 CETI.

January 29	2 10 0.07
October 31	0.04
November 25	0.11
26	0.08
December 5	0.09
12	0.12
18	0.00
19	0.12
30	0.12
31	0.11

LALANDE, 4238.

November 12	2 10 0.83

WEISSE II, 143.

1861.	h. m. s.
November 11	2 10 27.46
December 3	27.50
4	27.48

WEISSE II, 144.

November 16	2 10 31.63
December 28	31.65

WEISSE II, 158.

January 20	2 11 16.93
December 6	16.78
7	16.92
9	16.73

(☿ 8) + 56° 42′.

August 25	2 13 6.44

WEISSE II, 209.

December 25	2 13 53.16

A. Z. N., 59, 20.

November 12	2 13 53.95
21	53.89
December 4	53.71
11	54.15

WEISSE II, 235.

November 26	2 15 30.71
December 3	30.76

LACAILLE, 711.

December 5	2 15 49.46

SANTINI, 138.

December 11	2 17 1.89
18	1.92

B. A. C., 743.

November 18	2 17 8.62

B. A. C., 744.

January 20	2 17 34.93

B. A. C., 740.

December 4	2 17 42.10
9	43.04

B. Z., 332, 45.

October 31	2 17 51.07

B. Z., 27, 25.

November 11	2 19 3.09
December 6	2.97

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B. Z., 27, 26.

1861.		h. m. s.
November	11	2 19 16.42
December	6	16.31

(✡ 10) + 61° 6′.

December	25	2 19 24.14

CARRINGTON, 347.

October	30	2 19 31.63
December	30	32.66

ξ^2 CETI.

January	20	2 20 43.16
	29	43.12
September	22	43.13
October	31	43.07
November	4	43.20
	11	43.13
	12	43.12
	13	43.11
	21	43.10
	25	43.00
December	5	43.09
	7	43.13
	12	43.08
	14	43.07
	19	43.12
	28	43.06
	31	43.08

WEISSE II, 333.

November	26	2 20 48.69
December	3	48.80
	4	48.83
	11	48.68

27 ARIETIS.

September	22	2 23 8.72

WEISSE II, 415.

November	11	2 25 22.26
	12	22.12

B. Z., 391, 35.

October	31	2 25 37.26

WEISSE II, 437.

December	19	2 26 55.09

(✡ 8. 9) + 3° 31′.

November	12	2 27 20.72

B. A. C., 789.

January	29	2 27 39.49

WEISSE II, 455.

November	11	2 27 50.78
December	14	50.81

B. A. C., 809.

1861.		h. m. s.
January	20	2 31 9.84

B. A. C., 814.

November	25	2 32 49.73
December	30	49.41

WEISSE II, 576.

December	19	2 33 35.22

WEISSE II, 585.

November	12	2 34 2.57
December	4	2.65
	6	2.58
	14	2.64

μ ARIETIS.

September	22	2 34 28.64

γ CETI.

January	4	2 36 2.89
	19	2.91
	20	2.94
	29	2.90
August	25	2.93
October	31	2.93
November	13	2.98
	16	2.87
	21	2.92
	23	3.02
	26	2.87
December	3	2.87
	9	2.90
	11	2.92
	18	2.89
	25	2.94
	28	2.98
	30	2.94

B. Z., 391, 44.

December	4	2 36 50.61
	6	50.65

WEISSE II, 640.

December	19	2 37 21.67

η PERSEI.

December	25	2 40 30.38

41 ARIETIS

January	19	2 41 44.98
	20	45.00
August	25	44.95

16 PERSEI.

November	25	2 41 45.30
December	30	45.16

σ ARIETIS.

January	4	2 43 45.94

WEISSE II, 762.

1861.		h. m. s.
December	19	2 44 19.02

τ PERSEI.

December	31	2 44 21.05

LACAILLE, 900.

September	22	2 45 26.19

B. A. C., 894.

January	20	2 46 0.64

LACAILLE, 908.

November	18	2 47 0.36

(✡ 8) + 14° 49′.

December	27	2 47 28.82

Probably 1*m.* more.

(✡ 9. 10) + 14° 49′.

November	26	2 48 10.76
December	4	10.61
	9	10.64
	25	10.82

(✡ 9) 10 EUTERPE, + 14° 49′.

November	26	2 48 28.38
December	4	28.33
	9	28.33
	25	28.41

ρ^3 ARIETIS.

January	19	2 48 32.30
December	31	32.19

LACAILLE, 918.

September	22	2 48 43.73

WEISSE II, 846.

December	19	2 48 45.56

WEISSE II, 853.

December	19	2 49 2.81

(✡ 8. 9) + 14° 34′.

December	28	2 49 27.35

RUMKER, 755.

January	29	2 50 28.60
December	4	28.66
	18	28.66

ϵ ARIETIS.

1861.		h. m. s.
January	19	2 51 12.68
	20	12.71
August	25	12.69
December	14	12.67

γ PERSEI.

December	31	2 54 40.64

α CETI.

January	4	2 54 57.81
	19	57.82
August	25	57.81
October	30	57.76
November	11	57.79
	12	57.71
December	6	57.74
	9	57.78
	19	57.87

WEISSE II, 970.

November	26	2 55 13.84

B. Z., 27, 70.

January	20	2 55 21.86
December	18	21.83
	25	21.76

ρ PERSEI, (953.)

January	29	2 56 12.76

β PERSEI.

December	31	2 59 4.33

53 ARIETIS.

January	19	2 59 33.03

B. A. C., 960.

October	30	2 59 52.05

(✡ 9) — 28° 52′.

December	18	3 3 24.19

(✡) — 29° 14′.

October	30	3 3 31.99

WEISSE III, 35.

December	28	3 3 35.16

δ ARIETIS.

January	4	3 3 37.69
	19	37.73
	20	37.70
September	22	37.76
	23	37.70

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δ Arietis—Continued.

1861.		h. m. s.
November	11	3 3 37.67
	25	37.72
December	6	37.74
	9	37.58
	11	37.64
	13	37.69
	14	37.70
	16	37.73
	31	37.72

(✲) — 29° 14′.

October	30	3 3 49.96

B. Z, 448, 4.

January	29	3 4 6.70

B. Z, 448, 5.

January	29	3 4 23.68

B. Z., 337, 32.

December	19	3 4 24.03

ζ Arietis.

January	19	3 6 51.55
	20	51.51
September	22	51.64
	23	51.58

B. Z., 530. 91.

December	19	3 7 54.90
	28	54.89

(✲ 9. 10) + 23° 48′.

December	19	3 10 7.85

60 Arietis.

October	30	3 12 8.13

τ^1 Arietis.

September	22	3 13 9.13

f^1 Astræa, +8° 50′.

January	4	3 14 0.71

g^1 Astræa, + 8° 42′.

January	20	3 14 16.88
September	23	16.90

α Persei.

January	19	3 14 20.67
	29	20.60
October	30	20.70
November	25	20.70
December	6	20.70

Weisse III, 306.

1861.		h. m. s.
September	23	3 17 57.19

B. Z, 508, 94.

January	29	3 18 23.23

Weisse III, 334.

January	4	3 19 36.20

(✲ 8. 9) + 12° 15′.

January	20	3 20 38.31

B. A. C., 1061.

October	30	3 21 3.04
December	9	1.72
	14	3.70
	19	3.33
	28	3.13
	31	1.51

Groombridge, 698.

September	23	3 22 44.51

B. Z., 508, 101.

January	29	3 22 53.16
February	22	53.10

(✲ 9. 10) + 37° 02′.

February	4	3 22 59.46

9 Tauri.

January	20	3 28 44.29
October	30	44.45
November	16	44.34

B. A. C., 1109.

January	4	3 28 57.00

δ Persei.

October	30	3 32 57.45

B. A. C., 1130.

January	4	3 32 58.38
	29	58.39

16 Tauri.

October	30	3 36 29.20

17 Tauri.

January	19	3 36 33.96
	21	34.04
September	22	33.98
	23	33.96
	24	34.01
October	30	34.06
November	16	34.03
December	14	34.01

B. A. C., 1150.

1861.		h. m. s.
January	29	3 36 40.91

18 Pleiadum.

December	9	3 39 0.24

24 Tauri.

January	20	3 39 1.96
	21	1.98
February	4	1.97
September	22	1.95
	24	2.01
October	30	2.20
November	16	2.02
December	6	2.13
	31	1.95

η Tauri.

January	19	3 39 9.99
	20	10.02
	21	10.05
February	4	10.01
September	22	9.99
	23	10.07
	24	9.98
October	30	10.10
November	16	10.05
December	6	9.93
	9	10.01
	14	10.03
	19	9.99
	25	9.90
	31	10.01

B. A. C., 1171.

January	4	3 40 10.01

27 Tauri.

January	19	3 40 50.49
	20	50.53
	21	50.51
November	16	50.54
December	6	50.43
	25	50.50

28 Tauri.

January	20	3 40 51.74
	21	51.80
December	6	51.61
	25	51.54

(✲ 6.7) +23° 58′.

January	4	3 40 56.23

B. A. C., 1182.

January	4	3 41 1.38

B. Z., 402, 10.

January	31	3 41 51.96

Lalande, 7069.

1861.		h. m. s.
September	24	3 42 10.73

B. Z, 402, 13.

January	29	3 42 27.86
February	4	27.87

Lacaille, 1271.

September	24	3 47 53.25

Lacaille, 1291.

September	24	3 50 32.27

γ^1 Eridani.

January	21	3 51 29.93
	22	30.00
	29	29.95
	31	29.97
February	4	29.98
September	23	30.01
December	6	30.06
	9	29.90
	14	29.94
	30	29.94

B. A. C., 1250.

September	24	3 55 5.56

A^1 Tauri.

January	21	3 56 25.30
	22	25.27
September	23	25.37
December	14	25.34

Weisse IV, 21.

January	31	4 2 34.75

Rumker, 1104.

December	25	4 3 41.84
	27	41.99

o^1 Eridani.

January	4	4 5 1.99
	19	2.00
	22	2.09
	29	1.99
September	23	1.98
November	18	2.07
December	14	2.03

46 Tauri.

September	24	4 6 0.98
December	27	0.93

B. Z., 393, 68.

January	29	4 7 20.28

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(*) +20° 15′.

1861.		h. m. s.
January	31	4 7 28.31

ω² Tauri.

January	21	4 9 3.63

56 Tauri.

January	4	4 11 19.63
December	25	19.53
	27	19.65

γ Tauri.

September	23	4 11 49.75
	24	49.81

δ Tauri.

January	21	4 14 51.82

63 Tauri, (1350).

February	12	4 15 23.19

B. A. C., 1355.

November	18	4 15 42.86

B. Z., 397, 54.

January	4	4 16 52.27

B. A. C., 1366.

February	4	4 17 37.95

υ Tauri.

January	21	4 17 56.08

ε Tauri.

January	21	4 20 26.67
	22	26.69
	31	26.70
February	12	26.66
September	23	26.69
	24	26.76
November	18	26.70
December	30	26.57

Lalande, 8431.

February	4	4 21 11.51

(* 10) +29° 0′.—Egeria.

December	25	4 22 22.75
	27	23.11

(* 10) +29° 0′.

December	25	4 22 39.38
	27	39.75

85 Tauri, (1402.)

1861.		h m. s.
January	31	4 23 52.22
September	24	52.15

Lacaille, 1483.

November	18	4 24 37.29

Rumker, 1235.

February	4	4 24 49.87

B A. C., 1404.

February	12	4 24 53.98

(* 10) +28° 26′.—Calliope.

December	25	4 24 58.26

α Tauri.

January	22	4 27 53.39
	31	53.40
February	12	53.42
November	18	53.39
December	27	53.43
	30	53.37

B. Z, 398, 81.

January	21	4 29 38.15
February	4	38.18

B. Z, 393, 103.

December	25	4 33 0.89
	27	1.04

Lacaille, 1540.

November	18	4 33 10.48

B. Z., 393, 104.

December	25	4 33 19.12
	27	19.16

B. Z., 393, 105.

December	27	4 33 20.57

τ Tauri.

September	24	4 33 50.74

Weisse IV, 732.

December	30	4 34 0.86

54 Eridani, (1451.)

February	12	4 34 19.17

Weisse IV, 754.

1861.		h. m. s.
January	21	4 34 54.56
February	4	54.61

μ Eridani.

September	25	4 38 30.16

(* 10) —1° 37′.

February	4	4 40 55.60

(*) Comet I, 1853.

January	21	4 41 32.84
February	4	32.74

i Tauri.

September	24	4 43 11.24

Lacaille, 1631.

November	18	4 44 52.98

B. Z., 393, 120.

January	21	4 45 27.07

ι Aurigæ.

January	22	4 47 52.75
	30	52.72
	31	52.78
February	12	52.72
November	18	52.80
December	6	52.72

(* 9) +29° 56′.

February	4	4 48 20.00

Bessel, 398, 97.

February	4	4 48 32.96

k Tauri.

September	24	4 49 35.46

(*) +45. 35.

February	12	4 54 0.74

ι Tauri.

September	24	4 54 43.76
	25	43.73
December	16	43.83

(* 8.9) +30° 11′.

January	21	4 55 37.18

(* 8) +30° 11′.

1861.		h. m. s.
January	21	4 55 38.41

c Encke's Comet, +45° 14′.

January	30	4 55 59.95

ε Leporis.

January	30	4 59 32.13
	31	32.23
February	4	32.23
	12	32.22
September	24	32.07
November	18	32.22
December	6	32.30
	16	32.10
	18	32.15

Rumker, N. F., 2553.

February	20	5 2 9.02

B. Z., 513, 5.

January	21	5 3 39.08

B. Z., 396, 127.

February	4	5 3 41.58
	6	41.56

B. Z., 513, 7.

January	30	5 5 17.43

α Aurigæ.

January	31	5 6 21.00
September	24	21.11
November	18	20.98
December	16	21.03

β Orionis.

January	21	5 7 48.73
February	4	48.71
	6	48.64
	12	48.75
November	18	48.72
December	18	48.72
	25	48.66

B. Z., 405, 6.

February	20	5 11 (6.28)

o Columbæ.

September	24	5 12 26.08

B. A. C., 1661.

February	12	5 14 44.17

B. A. C., 1673.

September	24	5 16 12.69

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B. Z., 513, 24.

1861.		h. m. s.
January	31	5 16 36.77
February	21	36.59

β Tauri.

January	21	5 17 26.51
	22	26.50
	30	26.58
February	6	26.53
	12	26.52
	20	26.57

B. A. C., 1708.

February	21	5 20 33.58

Lacaille, 1840.

September	24	5 20 47.17

B. Z., 405, 16.

February	4	5 22 20.25

B. Z., 513, 31.

January	21	5 22 52.83

δ Orionis.

January	31	5 24 51.35
February	12	51.32
	20	51.30
	21	51.30
March	11	51.26
September	24	51.32
	25	51.30

121 Tauri.

January	30	5 26 54.09
February	6	54.04

B. Z., 513, 37.

January	21	5 27 0.86

θ^1 Orionis.

December	16	5 28 24.01

θ^2 Orionis.

December	16	5 28 30.39

ε Orionis.

January	30	5 29 6.60
February	4	6.63
	6	6.65
	13	6.60
	20	6.65
March	11	6.67
September	24	6.61
	25	6.66
December	17	6.63

(✲) + 25° 32′

January	31	5 29 16.65

ζ Tauri.

1861.		h. m. s.
January	22	5 29 16.75
March	19	16.78

B. Z., 405, 28.

January	21	5 30 13.90
February	21	13.93

α Columbæ.

January	21	5 34 34.87
	22	35.07
	30	34.89
	31	35.00
February	4	35.01
	6	34.81
	12	34.94
	13	34.85
	21	34.96
March	11	34.77

Lacaille, 1936.

September	24	5 34 39.14

B. A. C., 1817.

September	24	5 38 7.43

131 Tauri.

January	30	5 39 14.75

(✲ 9) + 9° 49′.

February	21	5 41 22.67

(✲ 8) — 13° 35′.

December	17	5 41 26.89

Lacaille, 1990.

September	24	5 41 36.53

B. A. C., 1851.

February	21	5 42 19.88
November	21	19.99

136 Tauri.

January	22	5 44 31.68
February	13	31.51

B. A. C., 1867.

December	16	5 44 59.73

χ^1 Orionis.

February	20	5 46 5.44
September	25	5.49
December	16	5.52
	17	5.58

B. A. C., 1881.

1861.		h. m. s.
November	21	5 46 47.79

B. Z., 405, 56.

January	21	5 46 55.92
February	4	55.99

α Orionis.

February	21	5 47 35.59
March	19	35.63
October	24	35.61

λ Columbæ

September	24	5 48 1.98

B. Z., 524, 72.

January	30	5 49 0.01
February	6	48 59.93

θ Aurigæ.

February	13	5 50 10.24

(✲ 8) + 19° 44′.

December	17	5 50 12.04

B. A. C., 1879, S. P.

August	1	5 50 12.93
	3	12.89
	6	13.21

B. Z., 346, 47.

January	21	5 51 43.91

B. Z., 346, 49.

January	21	5 51 58.62

γ Columbæ.

September	24	5 52 34.39

(✲) + 26° 20′.

February	4	5 53 44.26

Rumker, 1673.

February	6	5 54 44.82

B. Z., 518, 90.

February	13	5 54 45.02
November	21	45.22

B. A. C., 1930.

January	30	5 54 47.37

Rumker, 1680.

1861.		h. m. s.
February	6	5 55 9.37

χ^3 Orionis.

February	21	5 55 10.15

χ^4 Orionis.

March	11	5 55 36.26

1 Geminorum.

January	22	5 55 36.64
February	20	36.56

B. A. C., 1941.

September	24	5 56 11.72

Lalande, 11513.

February	13	5 57 58.04

Lalande, 11528.

November	21	5 58 29.54

ν Orionis.

January	22	5 59 34.75
February	4	34.64
	21	34.74
October	24	34.78
December	16	34.79
	17	34.69

B. Z., 525, 97.

January	21	6 2 38.80

η Geminorum.

February	6	6 6 25.52
March	19	25.71
September	25	25.54
October	24	25.61
November	21	25.61
December	16	25.62
	17	25.54

(✲ 8.9) +40° 59′.

February	13	6 6 25.71

B. Z., 522, 159.

February	13	6 7 26.95

(✲) + 21° 11′.

February	6	6 12 9.64

B. A. C., 2038.

February	6	6 12 52.00

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B. A. C , 2039.

1861.		h. m. s.
February	6	6 12 59.32

μ Geminorum.

March	19	6 14 29.33
	22	29.39
September	24	29.39
	25	29.40
October	24	29.35
November	21	29.46

(✲) Comet I, + 61° 4′.

March	11	6 25 44.40

(✲ 8. 9) — 14° 42′.

February	6	6 26 5.39

Weisse VI, 809.

February	6	6 26 56.79

51 Aurigæ.

January	21	6 28 56.99

γ Geminorum.

February	20	6 29 37.42
March	22	37.37
October	23	37.22
	24	37.32
November	23	37.41
December	18	37.39

B. Z., 348, 101.

February	6	6 31 33.67

51 Hev. Cephei.

January	21	6 33 37.67
	22	38.73
	30	40.56
February	4	37.84
	6	38.06
	12	38.22
	13	38.16
March	7	38.57
	11	38.01
	22	37.98
October	23	36.60
	24	38.96
November	21	38.15
	23	38.75
December	17	38.39
	19	39.41

Sub-Polo.

April	29	38.83
	30	38.68
June	22	39.01
July	3	38.80
August	1	38.52
	3	37.95
	6	38.39
	15	39.43
	20	39.75
September	2	38.13

ε Geminorum.

1861.		h. m. s.
February	20	6 35 18.94
	21	19.03
December	17	19.03

28 Geminorum.

February	13	6 35 53.01

Sirius.

January	22	6 38 58.89
October	23	58.81
November	23	58.58
December	18	58.72

B. A. C., 2221.

February	6	6 40 27.95

59 Aurigæ.

January	21	6 43 22.95
February	13	23.19

Weisse VI, 1351.

February	6	6 44 24.79
March	11	24.69

(✲) — 27° 10′.

March	7	6 44 55.61

16 Lyncis.

February	13	6 47 23.76

B. A. C., 2266.

February	21	6 47 59.73
March	7	59.58

Lacaille, 2519.

October	24	6 50 37.45

A. Z. N., 93, 90.

February	6	6 50 46.25

ε Canis Majoris.

January	21	6 53 7.53
	30	7.46
February	6	7.57
	15	7.50
March	7	7.51
	11	7.49
	19	7.46
	22	7.53
October	23	7.63
November	23	7.48

ζ Geminorum.

February	21	6 55 48.16
December	17	48.17

44 Geminorum, (2313.)

1861.		h. m. s.
February	15	6 56 52.51
March	11	52.44

17 Lyncis, (2312.)

February	6	6 57 4.25

Rumker, 2086.

February	6	6 57 11.25

γ Canis Majoris.

January	21	6 57 25.43
	30	25.47
February	13	25.54
	20	25.52
March	22	25.53
October	24	25.58
November	21	25.53
December	19	25.50

B. A. C , 2331.

February	21	7 0 23.88
March	7	23.84

B. A. C., 2341.

February	15	7 2 27.81
March	22	27.72

(✲) + 22° 28′.

February	13	7 3 26.80

B. A. C., 2363.

March	7	7 5 53.85
November	21	53.76

B. Z , 492, 6.

March	11	7 6 4.30
December	19	4.43

B. A. C., 2371.

February	21	7 6 40.66
March	19	40.49

B. A. C., 2383.

March	19	7 8 22.68

Weisse VII, 320.

March	11	7 11 9.85

δ Geminorum.

February	6	7 11 45.48
	13	45.52
	20	45.55
	21	45.57
March	7	45.53
	9	45.60
October	24	45.57
November	21	45.85
December	17	45.55
	18	45.51
	19	45.49

Weisse VII, 368.

1861.		h. m. s.
March	22	7 12 57.20

B. A. C , 2420.

March	19	7 13 8.33

Weisse VII, 387.

March	11	7 13 27.97

(✲ 8. 9) — 14° 26′.

December	17	7 14 37.57

Lacaille, 2767.

October	24	7 17 13.69

(✲ 8. 9) — 14° 27′.

February	6	7 17 43.26
March	22	43.33

B. A. C., 2453.

February	21	7 18 13.27
March	7	13.17
	19	13.15

Weisse VII, 551.

February	13	7 18 44.81
March	9	44.85

22 Lyncis, (2459.)

February	15	7 19 17.50

63 Geminorum.

November	21	7 19 25.56

(✲ 8. 9) + 10° 24′.

December	17	7 19 26.97

(✲ 8. 9) + 10° 19′.

December	17	7 19 39.43

(✲ 8. 9) + 15° 37′.

March	22	7 20 35.04

(✲ 8. 9) — 11° 17′.

March	19	7 20 45.92

B. A. C., 2470.

March	7	7 21 16.82
	19	16.70

B. Z., 276, 244.

March	22	7 23 38.34

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B. Z., 276, 245.

1861.		h. m. s.
March	22	7 23 38.66

α^1 Geminorum.

February	6	7 25 39.26
November	21	39.30
December	17	39.28

α^2 Geminorum.

February	6	7 25 39.70
	13	39.73
	15	39.67
	21	39.71
March	7	39.64
	9	39.68
April	17	39.68
November	21	39.74
December	17	39.75

υ Geminorum.

October	24	7 27 17.67

f Geminorum.

December	18	7 31 23.25
	19	23.29

α Canis Minoris.

March	19	7 31 58.37
April	17	58.39
December	18	58.28

α Clio, (8. 9,) + 10, 26.

March	22	7 33 24.05

(✡) + 13° 34′.

March	9	7 34 0.72

B. A. C., 2544.

February	15	7 35 1.64
March	22	1.63

κ Geminorum.

October	24	7 35 59.62
December	18	59.55

β Geminorum.

February	15	7 36 44.62
March	4	44.64
April	17	44.64

g Geminorum.

November	17	7 38 0.94

π Geminorum.

March	22	7 38 28.36

Radcliffe, 2020.

1861.		h. m. s.
August	3 S. P.	7 38 59.78

Rumker, 2282.

March	7	7 39 28.72

B. A. C., 2599.

March	9	7 43 9.24

ξ Navis.

March	7	7 43 24.48
	9	24.43
	19	24.43

ϕ Geminorum.

February	21	7 44 55.44
November	21	55.46

Lacaille, 3012.

December	19	7 45 5.44

85 Geminorum, (2632.)

March	4	7 47 29.41

(✡ 8) — 29° 58′.

March	7	7 50 53.14

B. A. C., 2655.

March	7	7 52 5.33
	19	5.40

(✡ 7) — 27° 37′.

October	27	7 52 15.03

6 Cancri.

November	21	7 54 54.85
December	19	54.70

B. A. C., 2677.

February	15	7 57 4.21
March	4	3.64

B. A. C., 2703.

March	7	7 58 0.48
	19	0.38

12 Cancri.

December	19	8 0 52.79

15 Argus.

March	7	8 1 35.01
	19	34.94

ζ^1 Cancri.

1861.		h. m. s.
December	19	8 4 10.77

ζ^2 Cancri.

December	19	8 4 11.04

B. A. C., 2788.

March	7	8 12 10.68

B. A. C., 2787.

March	11	8 14 7.54
	22	7.08
August	1 S. P.	6.01
	6 S. P.	7.13
September	6 S. P.	4.89
	14 S. P.	6.67
October	23 S. P.	7.57
	28 S. P.	6.96

B. Z., 278, 31 + 21° 01′.

February	15	8 14 47.90

Weisse VIII, 415.

March	9	8 16 32.31

Santini, 583.

October	27	8 18 19.36

B. A. C., 2818[1].

February	15	8 18 19.93

B. A. C., 2818[2].

February	15	8 18 20.15

B. A. C., 2827.

March	7	8 19 1.14

Santini, 588.

October	27	8 21 58.06

η Cancri.

February	15	8 24 36.48
	22	36.44
March	4	36.41
	7	36.43
	9	36.48
	11	36.43
	22	36.44
April	18	36.40
October	27	36.45
December	19	36.49

B. A. C., 2883.

March	9	8 27 23.66

Groombridge, 1452.

1861.		h. m. s.
February	15	8 30 18.91

39 Cancri.

March	22	8 32 2.93

40 Cancri.

March	22	8 32 7.98

Gr. C., 773.

March	4	8 34 42.11
	11	42.47

δ Cancri.

February	22	8 36 43.53
March	22	43.39
November	23	43.45
December	19	43.42

ε Hydræ.

February	15	8 39 21.60
March	4	21.61
	9	21.56
	11	21.58
April	17	21.69
October	27	21.61
November	23	21.57
December	19	21.62

52 Cancri, (2997.)

March	9	8 43 20.26

(✡ 9) — 13° 8′.

February	15	8 46 14.91

B. A. C., 3031.

March	9	8 47 53.57

Lalande, 17662.

April	17	8 49 35.36

ι Ursæ Majoris.

March	11	8 49 36.40
April	11	35.99

α Cancri.

February	22	8 50 49.61
March	22	49.57
April	18	49.61
October	27	49.56
November	23	49.58

B. A. C., 3078.

April	11	8 54 25.48

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B. A. C., 3082.

1861.		h. m. s.
March	9 - -	8 55 7.15

κ Cancri.

March	22 - -	9 0 9.58

B. A. C., 3121.

March	9 - -	9 1 54.26
April	11 - -	54.30

(✡ 7.8) — 25° 15′.

March	9 - -	9 2 31.65

83 Cancri.

March	9 - -	9 11 9.68
	22 - -	9.67
April	11 - -	9.74
	18 - -	9.73
	19 - -	9.63

B. A. C., 3194.

April	17 - -	9 15 25.40

B. A. C., 3199.

September	25 S. P.	9 16 48.52

B. A. C., 3206.

April	11 - -	9 16 52.26
	18 - -	52.18

α Hydræ.

February	22 - -	9 20 42.45
	25 - -	42.48
March	22 - -	42.39
April	18 - -	42.54
	19 - -	42.46
October	27 - -	42.45

Weisse IX, 488.

April	19 - -	9 23 4.30

B. Z., 345, 44.

April	17 - -	9 23 26.76
	20 - -	26.62

Weisse IX, 498.

April	19 - -	9 23 32.34

h Leonis.

March	22 - -	9 24 27.01

ψ Argus.

April	18 - -	9 25 11.53

33 Hydræ.

1861.		h. m. s.
April	11 - -	9 27 33.48

B. Z., 450, 82.

April	20 - -	9 32 41.31

o Leonis.

March	22 - -	9 33 40.40

B. Z., 349, 70 + 27° 41′.

April	11 - -	9 37 49.07

ε Leonis.

February	22 - -	9 37 53.84
April	18 - -	53.74
	19 - -	53.84
	20 - -	53.86
October	27 - -	53.81
December	21 - -	53.87

Radcliffe, 2396.

November	8 S. P.	9 39 21.90

Weisse IX, 867.

April	17 - -	9 39 57.39

Weisse IX, 868.

April	17 - -	9 39 58.82

(✡ 9) — 10° 56′.

February	25 - -	9 40 9.69

(✡ 9) — 10° 58′.

February	25 - -	9 41 2.22

(✡ 9) + 11° 12′.

April	17 - -	9 41 20.27

23 Leonis.

April	11 - -	9 43 27.12
	18 - -	27.14

(✡ 8.9) + 19° 27′.

April	17 - -	9 47 2.73

Rumker, 3002.

February	25 - -	9 47 49.38

Weisse IX, 1024.

April	20 - -	9 47 55.23

A. Z. N., 176, 26.

1861.		h. m. s.
November	23 S. P.	9 48 36.15

B. Z, 275, 87.

April	17 - -	9 51 41.25

π Leonis.

February	24 - -	9 52 48.77
	25 - -	48.69
April	11 - -	48.71
	20 - -	48.75
December	21 - -	48.77

α Metis, + 21° 13′.

April	17 - -	9 58 16.30

Weisse IX, 1259.

February	25 - -	9 59 5.59

α Leonis.

February	24 - -	10 0 54.74
April	19 - -	54.73
	20 - -	54.74
October	27 - -	54.75
November	25 - -	54.69

B. Z, 275, 106.

April	17 - -	10 1 35.88

B. A. C., 3468.

February	25 - -	10 2 54.15

B. A. C., 3489.

April	11 - -	10 6 53.39

B. A. C., 3495.

November	25 - -	10 8 39.10

Rumker, 3113.

April	17 - -	10 8 42.10

B. Z, 497, 51.

April	20 - -	10 8 45.95

γ^1 Leonis.

February	24 - -	10 12 14.91
	25 - -	14.91
December	21 - -	14.93

B. A. C., 3528.

November	13 S. P.	10 13 49.94

Weisse X, 234.

April	19 - -	10 14 27.69

Weisse X, 276.

1861.		h. m. s.
April	19 - -	10 16 54.37

Rumker, 3172.

April	11 - -	10 17 32.34

29 Leonis Minoris.

February	25 - -	10 17 39.71

30 Leonis Minoris.

November	25 - -	10 17 52.51

(✡ 9) + 18° 8′.

April	20 - -	10 18 49.13

B. A. C., 3576.

April	11 - -	10 20 26.11

B. Z., 456, 21.

April	17 - -	10 21 9.81

Lalande, 20419.

April	19 - -	10 25 14.43

ρ Leonis.

April	11 - -	10 25 26.20
November	25 - -	26.19
December	21 - -	26.23

37 Leonis Minoris.

April	11 - -	10 30 49.76

B. Z, 499, 114.

February	25 - -	10 32 6.28
April	20 - -	6.29

B Z, 407, 118.

April	19 - -	10 34 26.19

B. Z., 499, 117.

April	17 - -	10 34 35.16

34 Sextantis.

November	25 - -	10 35 23.61

B. Z, 498, 52.

December	24 - -	10 37 20.72

37 Sextantis.

February	24 - -	10 38 48.20
April	20 - -	48.21

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WEISSE X, 716.

1861.		h. m. s.
April	17	10 40 48.52

l LEONIS.

February	24	10 41 53.75
	25	53.67
April	20	53.74
November	25	53.72
December	23	53.70
	24	53.72

WEISSE X, 781.

April	17	10 43 46.58

B. A. C., 3733.

April	11	10 46 38.78

WEISSE X, 879.

April	10	10 48 32.84

(✡ 8. 9) + 35° 56′.

February	25	10 49 15.66

(✱ 9) + 35° 56′.

December	24	10 50 11.05

d LEONIS.

February	24	10 53 19.76
	25	19.72
April	20	19.74
	21	19.74

B. A. C., 3773.

April	11	10 53 53.55

a URSÆ MAJORIS.

April	17	10 55 3.39
December	6 S. P.	3.22
	23	3.27

χ LEONIS.

February	24	10 57 47.60
April	10	47.59
	20	47.60
	21	47.61
November	25	47.64
December	24	47.59

B. Z., 499, 147.

April	11	11 2 31.38

B. Z., 357, 22.

April	10	11 4 31.79

WEISSE XI, 61.

April	19	11 5 25.33
	20	25.37

*p*⁵ LEONIS.

1861.		h. m. s.
February	24	11 6 35.58
	25	35.55

δ LEONIS.

April	11	11 6 39.40
	17	39.42
	21	39.39
May	4	39.41
	9	39.37
December	23	39.44

B. Z., 501, 107.

April	20	11 7 40.08

φ LEONIS.

November	25	11 9 32.78
December	23	32.72

δ HYDRÆ ET CRATERIS.

February	25	11 12 20.64
April	17	20.57
	21	20.68
May	2	20.58
	4	20.63

WEISSE XI, 217.

April	10	11 13 30.37

WEISSE XI, 221.

December	24	11 13 47.46

(✡ 9) +36° 15′.

May	9	11 13 54.42

WEISSE XI, 233.

April	19	11 14 21.69
	20	21.77

WEISSE XI, 253.

April	10	11 15 29.75

WEISSE XI, 258.

April	20	11 15 50.85

B. A. C., 3892.

December	24	11 19 2.92

τ LEONIS.

February	25	11 20 44.19
December	23	44.21

58 URSÆ MAJORIS.

May	9	11 22 55.73

λ DRACONIS.

1861.		h. m. s.
December	23	11 23 2.66

e LEONIS.

April	21	11 23 9.71
	22	9.75

B. A. C., 3920.

April	11	11 24 50.03

LACAILLE, 4777.

May	2	11 26 1.40

B. Z., 496, 59.

April	10	11 26 51.91

WEISSE XI, 462.

May	4	11 27 14.14
December	24	14.04

WEISSE XI, 466.

May	4	11 27 32.59
December	24	32.46

B. A. C., 3940.

May	2	11 29 22.23

υ LEONIS.

January	30	11 29 46.86
February	25	46.86
March	27	46.88
April	10	46.92
	19	46.87
	20	46.87
	21	46.88
	22	46.88
May	9	46.93
	17	46.80
November	25	46.90

(✡ 7.8) +6° 50′.

May	2	11 31 51.54

(5) IRIS (9. 10) —5° 19′.

May	4	11 32 37.75

B. Z., 500, 130.

March	27	11 32 52.18
May	9	52.12

B. Z., 503, 11.

April	21	11 36 29.56
May	4	29.46

WEISSE XI, 641.

1861.		h m. s.
March	27	11 36 58.10

WEISSE XI, 662.

December	24	11 38 12.27

B. Z., 359, 32.

April	11	11 38 14.28

B. A. C., 3981.

January	30	11 38 38.64

RUMKER, 3738.

April	10	11 39 45.34
	19	45.35
May	9	45.19
	17	45.18

93 LEONIS.

April	11	11 40 45.52
May	4	45.55

β LEONIS.

January	30	11 41 54.91
March	27	54.87
April	19	54.93
	21	54.89
May	2	54.85
	15	54.85
	16	54.89
June	15	54.89
October	27	54.90

β VIRGINIS.

December	23	11 43 24.14

f COMET II, 1852, + 86° 57′.

April	10	11 44 32.66

B. A. C., 4010.

March	27	11 44 53.81

γ URSÆ MAJORIS.

January	30	11 46 26.99
April	11	26.86
June	15	26.83

B. A. C., 4020.

May	9	11 46 42.75

B. A. C., 4021.

May	17	11 46 53.50

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B Z, 358, 29.

1861.		h. m. s.
May	15	11 48 (43.50)

B. Z, 358, 30.

May	9	11 49 3.59
	17	3.60

B. A. C., 4050.

March	27	11 52 54.69

B. A. C., 4055.

May	16	11 54 0.08

67 Ursæ Majoris.

May	17	11 54 59.45

(☉ 8) +8° 40′

May	8	11 55 24.70

B. A. C., 4070.

March	27	11 57 37.40
April	10	35.74
	21	35.30
May	2	35.85
	4	36.77
	8	36.97
October	31 S. P.	37.46
November	5 S. P.	36.63
	7 S. P.	35.60
December	5 S. P.	38.14
	7 S. P.	37.35
	23	37.73
	24	37.18

B. A. C, 4080.

May	15	12 0 4.57

B. Z, 4126.

April	10	12 0 54.13

B. A. C., 4088.

April	24	12 1 7.24

B. A. C., 4095.

April	24	12 2 49.25

ε Corvi.

April	11	12 2 55.82
May	8	55.78
	9	55.77
	15	55.78
	16	55.77
	17	55.82
June	15	55.76
	16	55.75

B. A. C, 4100.

1861.		h. m. s.
January	30	12 3 39.02

Weisse XII, 63.

April	10	12 5 8.53

4 Draconis, (4112.)

December	25 S. P.	12 5 35.51

Weisse XII, 91.

May	4	12 6 56.46
	8	56.42
	9	56.28

Weisse XII, 160.

May	4	12 11 0.01

Rumker, 3907.

May	4	12 12 31.65

B. A. C., 4150.

October	18 S. P.	12 12 41.66
December	25 S. P.	42.53

η Virginis.

January	30	12 12 44.64
March	27	44.64
April	10	44.66
	21	44.60
	24	44.66
May	2	44.69
	8	44.64
	9	44.70
June	16	44.50
December	23	44.67
	24	44.64

Rumker, 3911.

April	11	12 12 47.37
May	4	47.22
	16	47.39

B. A. C., 4165.

October	24 S. P.	12 14 17.23
	29 S. P.	18.00
November	8 S. P.	21.46
	30 S. P.	19.02
December	3 S. P.	21.30
	5 S. P.	22.38
	7 S. P.	20.25
	23	19.86
	25 S. P.	17.78

B. A. C., 4171.

January	30	12 15 57.66

B. A. C., 4184.

1861.		h. m. s.
May	15	12 18 12.10

Rumker, 3966.

May	17	12 18 46.12

g Comet II, 1852, +86° 4′.

May	4	12 19 26.10

Weisse XII, 359.

May	8	12 21 55.56

Weisse XII, 360.

April	24	12 21 57.63
May	2	57.52

20 Comæ.

May	9	12 22 40.89
	15	40.93
	16	40.94

Weisse XII, 390.

March	27	12 24 4.10
April	10	4.16

(☉) +5° 30′.

May	17	12 24 12.58

Weisse XII, 433.

April	10	12 26 26.68

q Virginis.

January	30	12 26 33.35
February	25	33.31
December	24	33.38

β Corvi.

May	15	12 27 2.31
	16	2.37

(☉ 9) +3° 1′.

May	4	12 27 10.00
	9	10.15

κ Draconis.

December	23	12 27 28.89
	24 S. P.	29.27
	25 S. P.	29.12

Weisse XII, 463.

April	24	12 28 7.94
May	8	7.87

f Virginis.

1861.		h. m. s.
February	27	12 29 34.69

Weisse XII, 494.

March	27	12 30 7.45

B. Z, 409, 45.

May	15	12 30 10.95
	17	11.20

Weisse XII, 497.

May	16	12 30 18.67

Weisse XII, 510.

May	4	12 31 4.05

Weisse XII, 513.

May	2	12 31 14.03
	4	14.04
	9	14.00

Weisse XII, 519.

May	8	12 31 32.05

(☉ 10) +14° 31′.

May	8	12 31 48.43

Weisse XII, 526.

April	10	12 31 57.65
May	8	57.74

Weisse XII, 564.

March	27	12 34 23.50

γ^1 Virginis.

May	17	12 34 34.04
December	23	34.00

28 Virginis.

January	30	12 34 43.45
February	27	43.35

Weisse XII, 583.

April	24	12 35 14.83

Weisse XII, 584.

April	10	12 35 (19.43)
May	16	19.78

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B. A. C., 4281.

1861.		h. m. s.
September 18	S. P.	12 37 13.96
October 18	S. P.	15.59
31	S. P.	15.60

Weisse XII, 646.

May 16	- -	12 38 24.84

Weisse XII, 665.

March 27	- -	12 39 34.59

B. A. C., 4298.

October 18	S. P.	12 40 52.31

11 Canum Venaticorum.

May 17	- -	12 42 14.61

B. Z., 361, 41

March 27	- -	12 43 17.36

Weisse XII, 736.

April 24	- -	12 43 33.26
May 4	- -	33.48

Weisse XII, 757.

February 27	- -	12 44 41.36
April 10	- -	41.49
24	- -	41.49

ψ Virginis.

April 22	- -	12 47 4.54
December 24	- -	4.48

B. A. C., 4339.

October 18	S. P.	12 47 59.96
November 8	S. P.	48 0.73
December 4	S. P.	48 0.87

B. A. C., 4342.

October 18	S. P.	12 48 (7.83)
28	S. P.	8.87
November 8	S. P.	8.88
December 4	S. P.	8.54

δ Virginis.

May 9	- -	12 48 33.24
16	- -	32.94

Weisse XII, 835.

April 24	- -	12 49 15.57

Radcliffe, 2936.

May 31	- -	12 49 53.01

Weisse XII, 878.

1861.		h. m. s.
April 24	- -	12 51 48.45

B. A. C., 4363.

May 9	- -	12 54 22.73
16	- -	22.66

Weisse XII, 929.

April 24	- -	12 54 25.60
May 4	- -	25.58

Radcliffe, 2948.

May 31	- -	12 54 36.72

Weisse XII, 933.

April 10	- -	12 54 43.17
May 4	- -	43.20

ε Virginis.

June 16	- -	12 55 12.46

(i) Comet I, 1852, + 83° 40′.

April 24	- -	12 58 50.36

(✡ 9) + 13° 0′.

May 8	- -	13 0 30.27

g Virginis.

December 24	- -	13 0 33.91

Weisse XII, 1038.

May 8	- -	13 0 35.84
30	- -	35.81

θ Virginis.

January 30	- -	13 2 42.16
April 10	- -	42.14
22	- -	42.15
24	- -	42.11
May 2	- -	42.15
4	- -	42.20
9	- -	42.16
15	- -	42.14
16	- -	42.26
23	- -	42.26
31	- -	42.21
June 16	- -	42.21
18	- -	42.20
December 19	- -	42.19
24	- -	42.11

(h) Encke's Comet, + 13° 1′.

May 30	- -	13 4 39.30

Weisse XIII, 69.

May 8	- -	13 5 34.76

B. A. C., 4433.

1861.		h. m. s.
May 23	- -	13 7 21.56

Weisse XIII, 104.

May 28	- -	13 7 32.12
30	- -	32.07

58 Virginis.

January 30	- -	13 10 7.15

61 Virginis.

April 24	- -	13 11 5.14

Weisse XIII, 181.

May 8	- -	13 11 42.64

Weisse XIII, 208.

May 30	- -	13 13 6.75

B. A. C., 4462.

May 9	- -	13 13 29.44
15	- -	29.45

Weisse XIII, 223.

May 17	- -	13 14 13.04

B. A. C., 4479.

May 4	- -	13 17 32.76

α Virginis.

January 30	- -	13 17 49.26
February 27	- -	49.26
28	- -	49.32
March 27	- -	49.32
April 10	- -	49.29
22	- -	49.28
24	- -	49.25
May 2	- -	49.25
8	- -	49.25
22	- -	49.27
28	- -	49.26
29	- -	49.32
30	- -	49.23
June 15	- -	49.32
16	- -	49.32
18	- -	49.29
October 27	- -	49.26
November 11	- -	49.31
18	- -	49.30
December 19	- -	49.24
23	- -	49.29
24	- -	49.29

Weisse XIII, 294.

May 9	- -	13 18 54.65
16	- -	54.69

B. A. C., 4498.

1861.		h. m. s.
October 29	S. P.	13 20 24.48
November 13	S. P.	23.45

B. Z., 464, 125.

May 17	- -	13 21 52.60
31	- -	52.72

(✡ 7) — 1° 36′.

May 22	- -	13 23 58.10

B. A. C., 4519.

May 4	- -	13 25 11.04

h Virginis.

March 27	- -	13 25 35.87

(✡ 8) — 1° 36′.

May 29	- -	13 25 44.64

ζ Virginis.

February 27	- -	13 27 33.68
28	- -	33.65
May 4	- -	33.71
9	- -	33.68
15	- -	33.69
16	- -	33.66
22	- -	33.61
31	- -	33.71
June 18	- -	33.66

Weisse XIII, 458.

April 24	- -	13 27 41.27

Weisse XIII, 461.

May 8	- -	13 27 55.32

Weisse XIII, 472.

May 8	- -	13 28 13.41

B. A. C., 4536.

May 23	- -	13 28 32.34

k Comet II, 1852, + 80° 46′.

May 30	- -	13 28 40.13

(✡ 9) + 7° 15′

May 8	- -	13 28 47.07

Weisse XIII, 501.

May 17	- -	13 30 6.63

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Weisse XIII, 512.

1861.		h. m. s.
March	27	13 30 32.88

B. A. C., 4560.

March	27	13 33 32.48
April	24	32.54
May	28	32.43

l Comet II, 1852, + 80° 0′.

February	27	13 36 40.45

B. Z., 462, 49.

May	29	13 37 38.22
	31	38.51

83 Virginis.

February	28	13 37 56.82

85 Virginis.

May	15	13 38 2.91
	17	2.86
	22	3.00
June	18	3.03

86 Virginis.

March	27	13 38 28.92

Weisse XIII, 674.

April	24	13 39 54.18
May	4	54.24

A. C., 13158.

February	28	13 41 16.52

η Ursæ Majoris.

May	17	13 42 1.04
	31	1.01
June	8	1.03
October	12	1.12

89 Virginis.

March	27	13 42 16.21
June	18	16.16

(✡ 8) + 18° 35′.

March	1	13 42 42.74

B. Z, 466. 45.

May	28	13 45 46.27

B. Z, 412, 139.

May	31	13 46 17.48

η Bootis.

1861.		h. m. s.
February	27	13 48 1.08
March	1	1.08
	27	1.04
May	8	0.97
	23	0.99
June	8	1.04
	15	1.05

Rumker, 4529.

June	18	13 51 1.49

o Comet II, 1852, + 76° 58′.

May	8	13 53 50.07
	30	50.38

Rumker, 4551.

May	23	13 54 30.77

τ Virginis.

February	28	13 54 31.29
March	1	31.40
	27	31.35
April	24	31.39
	25	31.37
May	4	31.37
	22	31.45
	28	31.35
	31	31.35
June	8	31.45
	14	31.31
	15	31.40

94 Virginis.

June	18	13 58 53.16

(✡ 8) — 13° 15′.

May	31	13 59 7.90

B. A. C., 4691.

February	28	13 59 36.73
May	22	36.62
	29	36.62

s Comet II, 1852, + 66° 14′.

May	8	14 1 56.18

Weisse XIV, 31.

March	27	14 3 7.97
June	18	7.89

B. A. C., 4700.

May	22	14 3 11.97

A. Z. S., 206, 32.

May	23	14 3 34.67

Groombridge, 2099.

1861.		h. m. s.
May	4	14 4 27.23
December	14 S. P.	26.77

B. A. C., 4719.

February	28	14 6 55.30
May	29	55.24
	31	55.34

B. A. C., 4722.

March	27	14 7 41.47

α Bootis.

March	1	14 9 16.55
April	24	16.52
June	8	16.55
	19	16.53
October	12	16.55
November	11	16.45
	18	16.52
December	23	16.50

(✡ 9) —4° 33′.

May	28	14 9 47.18
	30	47.38

Weisse XIV, 171.

May	28	14 10 32.43
	30	32.50

Weisse XIV, 174.

May	28	14 10 38.50
	30	38.55

ι Bootis

June	15	14 11 12.32

Lalande, 26172.

February	28	14 11 41.80

A. Z. S., 301, 20.

June	18	14 12 38.64

Lalande, 26210.

May	23	14 13 4.36

B. A. C, 4767.

March	27	14 16 49.81

B. A. C., 4769.

May	22	14 17 2.48

B. A. C, 4773.

1861.		h. m. s.
April	25	14 17 13.39
May	22	13.34

(✡ 9) + 6° 28′.

May	29	14 17 29.83

(✡ 9) — 3° 9′.

May	8	14 22 43.79
	30	43.79

Weisse XIV, 422.

May	30	14 23 36.69

Weisse XIV, 423.

March	1	14 23 41.55
May	22	41.56
	23	41.45
	31	41.56

w Comet I, 1850, +49° 10′.

May	28	14 24 39.48
June	8	39.39

ρ Bootis.

May	29	14 25 47.66
June	14	47.60
	19	47.56

B. A. C., 4814.

February	28	14 26 58.31

u Comet I, 1850, +50° 56′.

May	30	14 27 4.01

Weisse XIV, 503.

April	24	14 28 5.81
May	8	5.74
	23	5.81

σ Bootis.

April	25	14 28 34.85
May	29	35.06
	31	34.81
June	19	35.05

Weisse XIV, 519.

May	28	14 28 53.34

Weisse XIV, 540.

February	28	14 29 50.88

Weisse XIV, 606.

May	23	14 33 36.51

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Weisse XIV, 608.

1861.		h. m. s.
May	28	14 33 45.44

A. Z. S., 301, 47.

May	30	14 34 50.48
June	15	50.49

A. Z. S., 301, 48.

May	30	14 35 26.59
June	15	26.54

Weisse XIV, 668.

April	24	14 37 0.70
May	8	0.71
	22	0.77
	23	0.74
June	14	0.87
	19	0.84

108 Virginis.

February	28	14 38 22.48
April	25	22.56
May	29	22.36

ε Boötis.

March	1	14 38 52.29
June	18	52.30

Weisse XIV, 759.

May	8	14 41 16.14
	28	16.05
June	14	16.18

Weisse XIV, 787.

May	28	14 42 38.71

α^1 Libræ.

May	30	14 42 56.86

α^2 Libræ.

February	28	14 43 8.35
March	1	8.32
April	24	8.29
	25	8.27
May	8	8.28
	22	8.29
	23	8.31
	29	8.31
	30	8.28
June	13	8.27
	15	8.26
	18	8.27
	19	8.32

B. A. C., 4902.

June	8	14 43 56.63

(☉) —27° 47′.

1861.		h. m. s.
May	29	14 46 3.33

Weisse XIV, 872.

May	28	14 46 35.82
June	15	36.05

Weisse XIV, 874.

May	28	14 46 39.03
June	15	39.09

(☉) +43° 58′.

June	13	14 51 0.97

β Ursæ Minoris.

March	1	14 51 9.14
April	26	9.11
May	8	9.04
	23	9.18
June	8	9.25
	14	9.43
	15	9.12
	18	9.25
	19	8.98
November	11 S. P.	9.21
	11	9.20
	18	8.98
December	6 S. P.	9.32
	9 S. P.	9.09
	16 S. P.	8.85
	16	9.35
	27 S. P.	9.20

(☉ 8. 9) +43° 54′.

May	30	14 52 1.19

B. Z., 473, 106.

May	28	14 52 57.74
	29	57.92
	30	57.84
	31	57.91

B. Z, 473, 108.

May	30	14 54 1.68

20 Libræ.

February	28	14 55 52.99
March	1	53.02
	29	52.98
May	22	52.91
	23	53.02
June	18	52.97
	19	52.97

Σ. Cat. Gen., 1683.

May	29	14 57 9.59

ψ Boötis.

May	31	14 58 26.76

Weisse XIV, 1129.

1861.		h. m. s.
May	8	15 0 15.20
	28	15.26
June	14	15.30

Weisse XIV, 1131.

May	30	15 0 19.64
June	8	19.48

Weisse XIV, 1142.

May	28	15 0 50.86
	30	50.86
June	8	50.83

Weisse XIV, 1150.

April	26	15 1 19.62
May	8	19.40
June	11	19.52
	15	19.45

(☉8 9) +0° 25′.

May	28	15 1 19.53

Weisse XV, 2.

February	28	15 1 55.55

ι^1 Libræ.

March	1	15 4 14.81
	29	14.83
April	24	14.74
	25	14.77
May	22	14.69
	23	14.71
July	17	14.85

ι^2 Libræ.

May	29	15 5 20.88
	31	21.01
June	14	21.08

Weisse XV, 79.

June	15	15 6 3.28

B. Z., 419, 3.

June	8	15 6 32.82

3 Serpentis.

June	11	15 8 13.80

β Libræ.

February	28	15 9 28.66
March	1	28.54
	29	28.65
April	24	28.60
May	8	28.60
	22	28.56
	30	28.59

β Libræ—Continued.

1861.		h. m. s.
May	31	15 9 28.67
June	11	28.54
	13	28.60
	14	28.67
	15	28.56
	18	28.59
July	17	28.64

A. Z. N., 116, 71.

May	29	15 12 9.16
June	14	8.84

5 Serpentis.

May	23	15 12 10.06

Weisse XV, 210.

May	28	15 12 37.20
June	8	37.01

Weisse XV, 221.

April	26	15 13 20.88

Weisse XV, 249.

May	30	15 14 49.45

B. A. C., 5064.

May	31	15 15 5.98

Weisse XV, 254.

June	27	15 15 7.03

B. A. C., 5066.

February	28	15 15 38.92
June	19	38.97

B. A. C., 5091.

May	23	15 20 18.70

ζ^1 Libræ.

July	17	15 20 21.73

10 Serpentis.

June	8	15 21 33.98

ι Draconis.

June	13	15 21 49.04

B. A. C., 5140.

April	26	15 24 2.10
June	11	23 59.60
	27	23 57.87
December	14 S. P.	24 0.89
	31 S. P.	23 57.46

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B. A. C., 5117.

1861.		h. m. s.
May	29	15 25 36.24
	31	36.20
June	14	36.28

γ Libræ.

June	8	15 27 41.92
	13	42.01

39 Libræ.

June	19	15 28 31.94
	20	32.04

α Coronæ Borealis.

February	28	15 28 45 53
March	29	45.50
April	26	45.56
May	28	45.55
	29	45.65
	31	45.54
June	14	45.66
	25	45.57
	27	45.61
July	17	45.52
October	12	45.61
	28	45.60
	30	45.53

μ Coronæ Borealis.

June	11	15 30 6.49

Lalande, 28453.

May	23	15 30 44.11

41 Libræ.

May	30	15 30 51.24

42 Libræ.

June	8	15 32 0.64

Weisse XV, 620.

May	23	15 32 58.33
	28	58.50
June	14	58.60

B. A. C., 5184.

April	26	15 34 54.10

d Irene, (10,) — 17° 15′.

May	30	15 35 6.52

Lalande, 28617.

May	30	15 36 0.99
June	13	1.00
	14	1.06
	27	0.98

(10) Comet I, 1861, + 66° 14′.

1861.		h. m. s.
May	29	15 37 5.00

α Serpentis.

March	1	15 37 22.37
April	25	22.37
May	23	22.38
	25	22.38
	28	22.45
June	8	22.33
	11	22.36
	19	22.42
	20	22.37
	21	22.41
	25	22.40
July	3	22.39
	17	22.35
October	28	22.41

Lalande, 28697.

June	13	15 37 54.21

Lalande, 28726.

April	26	15 39 19.83
June	14	19.80

B. A. C., 5215.

June	19	15 39 48.17

Lalande, 28766.

June	8	15 41 4.25

B. A. C., 5240.

July	12	15 43 34.45

Weisse XV, 845.

May	30	15 44 7.61

Weisse XV, 848.

June	19	15 44 17.89

A. Z. N., 116, 120.

May	29	15 44 49.16

λ Libræ.

March	1	15 45 12.61

A. Z. N., 116, 121.

May	29	15 45 17.68

Weisse XV, 864.

June	8	15 45 26.55

B. A. C., 5254.

April	26	15 45 36.30

θ Libræ.

May	25	15 45 51.42

(☉ 8) Phocæ, — 2° 28′.

June	14	15 46 6.51

47 Libræ.

June	13	15 46 55.09

B. A. C., 5266.

July	12	15 47 12.61

Lacaille, 6590.

July	17	15 48 0.59

ρ Scorpii.

June	19	15 48 14.74

B. A. C., 5278.

June	27	15 49 0.44

ζ Ursæ Minoris.

June	11	15 49 8.19
	21	8.21
	25	8.06
	29	8.16
July	3	8.54
November	25 S. P.	8.33
December	27 S. P.	8.10

Weisse XV, 939.

May	30	15 49 44.78

π Scorpii.

May	23	15 50 23.27

B. A. C., 5294.

July	12	15 50 56.40

B. A. C., 5299.

July	17	15 51 6.29

j Astræa, — 10° 52′.

June	8	15 51 9.38

δ Scorpii.

March	1	15 52 3.58
May	23	3.60

B. A. C., 5314.

July	12	15 54 53.18

Lacaille, 6657.

1861.		h. m. s.
July	17	15 55 22.98

51 Libræ.

May	25	15 56 40.29

h Astræa, — 11° 39′.

May	30	15 56 41.81

β¹ Scorpii.

March	1	15 57 18.04
April	25	18.05
	26	18.09
	29	18.02
June	11	18.10
	13	18.06
	14	18.02
	19	17.98
	22	18.07
	25	18.07
	27	18.10
	29	18.01
July	12	18.00

Weisse XV, 1092.

June	21	15 58 2.57
July	3	2.40

g Astræa, — 12° 8′

June	8	15 58 48.89

A. Z. S., 213, 5.

May	30	15 59 2.07
June	29	2.05

B. A. C., 5345.

July	12	15 59 27.83

o Petersen's Comet, + 69° 33′.

May	25	15 59 32.23

p Petersen's Comet, + 69° 33.′

May	25	15 59 54.08

f Astræa, — 21° 15′.

June	8	16 2 24.67

c² Scorpii.

July	12	16 3 41.00

ν Scorpii.

April	25	16 3 51.64
	26	51.77

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A. Z. N., 123, 2.

1861.		h. m. s.
June	19	16 4 46.38
July	4	46.46

GROOMBRIDGE, 2319

May	25	16 5 20.40

(✡ 9) + 70° 38′.

May	25	16 5 29.84

e IRENE, — 20° 43′.

June	14	16 6 15.29
	22	15.17
	25	15.22

B. A. C., 5408.

June	11	16 6 34.75

δ OPHIUCHI.

April	25	16 7 0.68
May	23	0.63
	30	0.62
June	13	0.60
	21	0.58
July	3	0.60
	11	0.60
	12	0.67

d ASTRÆA, — 12° 53′.

June	8	16 7 18.80
	27	19.06

b IRIS, — 24° 47.′

June	29	16 7 19.42

a ASTRÆA, — 13° 2′.

May	30	16 10 0.72

LACAILLE, 6781.

June	25	16 10 8.39
July	3	8.41

b ASTRÆA, — 13° 7′.

May	30	16 10 10.15

ε OPHIUCHI.

June	11	16 10 54.88

B. A. C, 5441.

July	12	16 11 48.89

σ SCORPII.

April	26	16 12 41.06
May	23	41.03
July	4	41.04
	17	41.05

A. Z. S., 297, 84.

1861.		h. m. s.
June	29	16 14 51.86

LACAILLE, 6818.

June	14	16 15 22.17
	21	22.36
	22	22.18
July	3	22.25

h PETERSEN'S COMET, + 71° 9′.

May	25	16 15 41.90
	30	41.88
June	8	41.87

i PETERSEN'S COMET, + 71° 14′.

June	8	16 15 51.05

ψ OPHIUCHI.

June	11	16 15 54.80

υ OPHIUCHI.

July	4	16 20 13.94

α SCORPII.

April	26	16 20 49.73
May	23	49.67
	25	49.67
	30	49.67
June	14	49.61
	22	49.69
	25	49.65
	27	49.66
	29	49.72
July	6	49.69
	8	49.72
	11	49.65
	12	49.65
	17	49.74
October	12	49.76
	18	49.85
	30	49.74
November	19	49.70
December	9	49.84

22 SCORPII.

June	11	16 21 42.30

B. A. C., 5529.

July	4	16 25 12.30

(✡ 8) + 33° 56′.

July	11	16 25 53.71

(✡ 8) — 4° 6′.

July	3	16 26 1.28

LACAILLE, 6888.

July	17	16 26 52.28

GROOMBRIDGE, 2356.

1861.		h. m s.
April	26	16 26 52.52

LACAILLE, 6891.

July	11	16 27 7.99
	12	8.08

τ SCORPII.

June	11	16 27 10.20
	21	10.33

9 PHOCÆ, — 4° 8′.

May	30	16 27 45.18
June	8	45.17
	22	45.36

σ HERCULIS.

July	6	16 29 35.36

B. A. C., 5556.

July	8	16 30 26.35

LACAILLE, 6922.

July	12	16 31 6.43

LACAILLE, 6923.

July	17	16 31 24.65

(✡ 8) — 26° 3′.

June	27	16 31 36.79

LACAILLE, 6931.

July	11	16 32 40.83

(✡ 7. 8) — 32° 52′.

July	11	16 32 48.34

(✡ 6) + 49° 9′.

June	8	16 34 43.42
July	4	43.40

42 HERCULIS.

June	8	16 34 56.80
July	4	56.93

B. A. C, 5600.

May	25	16 35 36.38

ζ HERCULIS.

July	3	16 36 0.37
	6	0.48
	8	0.45

B. A. C, 5603.

1861.		h. m. s.
July	12	16 36 14.93

LACAILLE, 6965.

July	17	16 36 27.37

LACAILLE, 6976.

July	11	16 37 37.36

(✡ 8. 9) + 62° 36′.

June	27	16 38 3.33

η HERCULIS.

June	11	16 38 5.64

B. A. C., 5622.

May	25	16 39 27.76

A. Z. N., 125, 9.

June	21	16 39 32.92
	27	33.44

g DRACONIS.

June	8	16 39 57.37
July	4	57.29

LACAILLE, 6987.

July	17	16 40 10.13

18 OPHIUCHI.

July	3	16 41 13.27
	12	13.26

20 OPHIUCHI.

June	20	16 42 5.47

LACAILLE, 7023.

July	11	16 44 1.22
	17	1.36

LALANDE, 30671.

June	22	16 45 4.52

B. A. C., 5678.

June	11	16 46 9.87

B. A. C., 5684.

June	11	16 46 52.95

B. A. C., 5687.

July	8	16 47 9.18

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A. Z. S., 388, 83.

1861.		h. m. s.
June	22	16 50 42.03

κ Ophiuchi.

April	26	16 51 2.55
June	21	2.47
	27	2.53
	29	2.50
July	4	2.51
	6	2.53
	17	2.59

(✲) — 31° 38′.

July	8	16 54 16.88

A. Z. N., 125, 32.

June	21	16 55 21.63

B. A. C., 5756.

July	11	16 57 34.74

B. A. C., 5769.

April	26	16 59 5.03
June	22	5.17

ε Ursæ Minoris.

May	25	17 0 26.59
June	8	27.13
	10	26.73
	20	26.40
	27	27.48
July	8	27.24
	12	26.84
	17	26.99

Groombridge, 2420.

July	4	17 4 16.36

A¹ Ophiuchi.

June	20	17 6 44.47
	21	44.41

α¹ Herculis.

June	8	17 8 15.78
	11	15.81
July	11	15.82
	25	15.80
October	23	15.87
	28	15.81

B. A. C., 5824.

July	12	17 9 13.44

B. A. C., 5829.

April	26	17 9 28.48
June	27	28.39

39 Ophiuchi.

1861.		h m. s.
April	26	17 9 28.54
June	21	28.53
	22	28.37

B. A. C., 5833.

July	8	17 10 14.99

θ Ophiuchi.

April	26	17 13 24.80
June	8	24.84
	11	24.77
	20	24.84
	21	24.78
	22	24.73
	27	24.75
July	4	24.77
	11	24.86
	12	24.85
	25	24.82
	30	24.84

B. A. C., 5858.

July	8	17 14 33.50

Weisse XVII, 254.

July	3	17 15 11.95
	4	11.90
	24	11.96

b Ophiuchi.

June	20	17 17 49.36

d Ophiuchi.

July	3	17 18 24.97

Lacaille, 7312.

July	8	17 20 52.19

(✲ 9) — 17° 41′.

July	25	17 21 31.73

(✲ 8) — 17° 41′.

July	25	17 21 49.09

Weisse XVII, 409.

June	21	17 22 18 22
July	3	18.29

c² Ophiuchi.

June	20	17 22 52.51
July	4	52.55

B. A. C., 5924.

July	12	17 25 33.48

α Ophiuchi.

1861.		h. m. s.
June	20	17 28 26.09
July	3	26.19
	11	26.16
	20	26.13
	25	26.13
	30	26.07
August	1	26.08
October	23	26.16
	28	26.17
November	23	26.22

Lalande, 32045.

June	22	17 29 18.24

B. A. C., 5946.

July	8	17 29 23.04

ν¹ Draconis.

July	4	17 29 25.31

ν² Draconis.

July	4	17 29 30.66

(✲ 9) + 19° 21′.

July	25	17 33 3.77

B. A. C., 5983.

July	8	17 34 31.62
	11	31.56

ι Herculis.

July	4	17 35 30.88

B. A. C., 6015.

July	11	17 39 42.69

B. A. C., 6016.

July	27	17 40 4.91

γ Ophiuchi.

July	4	17 40 52.42

μ Herculis.

July	12	17 40 58.76
August	15	58.77

B. A. C., 6023.

July	8	17 41 23.88

Weisse XVII, 834.

June	20	17 42 33.02

B. A. C., 6032.

1861.		h. m. s.
April	26	17 43 (13.16)

Lalande, 32559.

July	20	17 43 14.46

Weisse XVII, 846.

July	25	17 43 14.78

Weisse XVII, 857.

July	25	17 43 38.35

B. A. C., 6044.

July	11	17 44 47.49

30 Draconis.

June	22	17 45 43.95
July	4	43.82

(✲ 7) — 31° 55′.

July	27	17 46 27.42

(✲ 8) — 31° 54′.

July	27	17 47 8.95

(✲ 7) — 31° 58′.

July	27	17 47 21.31

B. A. C., 6063.

July	8	17 47 51.54
	25	51.43

B. A. C., 6072.

July	11	17 49 46.22

(✲ 8) —28° 40′.

July	27	17 51 50.16

γ Draconis.

July	20	17 53 21.25

A. C., 17510.

July	11	17 54 4.08

A. C., 17512.

July	11	17 54 5.23

7 Sagittarii.

July	11	17 54 16.44

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B. A. C., 6103.

1861.		h. m. s.
July	27	17 55 24.65

γ^1 Sagittarii.

June	21	17 56 4.60
	22	4.66
July	8	4.64

B. A. C., 6120.

July	25	17 57 54.40

B. A. C., 6132.

July	4	18 0 14.59
	8	14.72
August	3	14.50

(☿ 9) — 17° 13′.

July	25	18 1 58.31

o Herculis.

August	1	18 2 4.84
	6	4.60

d Melpomene, — 17° 14′.

July	11	18 2 37.29

B. A. C., 6161.

June	20	18 3 10.72
July	20	10.64

μ^1 Sagittarii.

April	29	18 5 23.38
June	20	23.39
	21	23.40
	22	23.36
July	4	23.40
	30	23.40
August	1	23.44
	3	23.37
	6	23.40
	15	23.42
September	2	23.37
	12	23.38
	13	23.36

e Melpomene, — 17° 24′.

July	11	18 6 29.31
	25	29.09

A Eunomia, — 23° 38′.

August	1	18 9 4.35
	3	4.23

Lalande, 33684.

July	25	18 11 23.89

Lalande, 33694.

1861.		h. m. s.
July	11	18 11 39.93

δ Sagittarii.

August	15	18 12 1.92
September	12	1.72

B. A. C., 6222.

August	1	18 13 33.63
	3	33.66

ε Sagittarii.

September	2	18 14 52.65

B. A. C., 6241.

August	15	18 16 18.40

δ Ursæ Minoris.

April	29	18 17 30.75
May	25	30.40
June	20	30.42
	22	30.88
July	3	30.53
August	1	30.42
	3	29.86
	6	30.28
	15	31.32
September	2	30.04
January	21 S. P.	29.57
	22 S. P.	30.60
	30 S. P.	29.45
February	4 S. P.	29.77
	6 S. P.	29.93
	13 S. P.	29.99
March	7 S. P.	30.45
	11 S. P.	29.89
	22 S. P.	30.86
October	23 S. P.	29.26
	24 S. P.	29.83
November	21 S. P.	30.17
	23 S. P.	31.10
December	17 S. P.	30.29
	19 S. P.	29.48

B. A. C., 6258.

September	2	18 18 12.19

Lalande, 33966.

July	11	18 18 15.20
	20	15.06

λ Sagittarii.

August	15	18 19 19.81
September	12	19.67

B. A. C., 6266.

August	6	18 19 37.40

b Eunomia, — 22° 47′.

July	25	18 21 13.80
August	3	13.80

B. A. C., 6293.

1861.		h. m. s.
July	11	18 23 11 57
August	1	11.54

Lalande, 34229.

July	25	18 24 18.69
August	3	18.78

Lalande, 34354.

July	11	18 27 24.02

B. A. C., 6327.

September	13	18 28 12.00

B. A. C., 6336.

July	20	18 29 31.35

B. A. C., 6341.

July	30	18 29 40.69
August	6	40.59

f Melpomene, — 18° 56′.

July	11	18 30 29.03

α Lyræ.

October	11	18 32 11.79
	12	11.74
	13	11.93
	18	11.69
	23	11.69
November	18	11.81
	19	11.70
	23	11.79
December	6	11.71
	9	11.78
	10	11.78
	21	(12.85)

ϕ Sagittarii.

May	25	18 36 54.51
July	20	54.38
September	13	54.40

29 Sagittarii.

July	20	18 41 21.51

(☿) — 44° 41′.

August	1	18 42 9.05

B. A. C., 6428.

April	30	18 44 34.59
September	2	34.43

β^1 Lyræ.

1861.		h. m. s.
May	25	18 44 54.59
July	11	54.54
	25	54.59
August	1	54.55
	3	54.62
	20	54.58
October	12	54.48
	18	54.57
	23	54.51
	28	54.45
November	18	54.62
	19	54.62
	23	54.61

σ Sagittarii.

April	28	18 46 34.78
	29	34.81
May	25	34.87
June	22	34.90
July	20	34.87
August	6	34.82
September	12	34.97
	13	34.89

Rumker, 6881.

August	1	18 50 41.80
	3	41.75

Lacaille, 7953.

September	13	18 51 49.96

Weisse XVIII, 1344.

August	3	18 53 30.26

ζ Sagittarii.

June	22	18 53 42.03

Lalande, 35468.

April	29	18 54 0.31
	30	0.35

B. A. C., 6499.

September	13	18 55 25.41

o Sagittarii.

April	28	18 56 17.50

B. Z., 302, 3.

August	1	18 58 9.27

ζ Aquilæ.

July	20	18 58 58.42
	25	58.49
August	20	58.44
	24	58.43
September	2	58.42
	12	58.39
	30	58.43
October	12	58.43
	23	58.44
	28	58.41
November	18	58.48
	19	58.46

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(* 8) — 13° 4′.

1861.		h. m. s.
August	3	18 59 31.48

LACAILLE, 7998.

August	6	18 59 33.21
September	13	33.24

B. A. C., 6537.

May	25	19 0 10.80

WEISSE XVIII, 1547.

April	30	19 0 34.18
August	3	34.11

π SAGITTARII.

April	28	19 1 26.16
	29	26.04
June	22	26.09

B. A. C., 6550.

August	1	19 1 32.64

LACAILLE, 8028.

August	6	19 3 32.46
September	13	32.48

(* 7) — 34° 5′.

August	6	19 3 33.08
September	13	33.29

B. A. C , 6565.

September	2	19 5 15.19

LACAILLE, 8045.

July	11	19 6 37.70
September	30	37.68

LACAILLE, 8060.

August	6	19 9 14.56

(* 7) — 33° 25′.

August	6	19 9 59.00

(* 6. 7) + 30° 59′.

August	20	19 10 34.54
	24	34.42

ω AQUILÆ.

April	28	19 11 14.59
	39	14.65
May	25	14.62
June	22	14.69
July	11	14.66

ω AQUILÆ—Continued.

1861.		h. m. s.
July	23	14.59
August	1	14.66
	3	14.61
September	3	14.60
	13	14.62
	28	14.61
	30	14.65
October	5	14.61

θ LYRÆ.

September	12	19 11 30.34

B. A. C., 6606.

September	2	19 11 (50.26)

B. A. C., 6611.

April	29	19 13 6.73

WEISSE XIX, 315.

April	30	19 13 39.85

υ SAGITTARII.

July	20	19 13 42.40

GR. C., 1719.

August	3	19 14 23.01

LACAILLE, 8090.

September	3	19 14 35.87

LACAILLE, 8092.

August	6	19 14 53.78

χ^1 SAGITTARII.

September	13	19 16 45.07

(* 9) — 19° 20′.

August	1	19 16 53.92

2 SAGITTÆ.

August	24	19 18 4.69

B. A. C., 6639.

September	3	19 18 5.29

δ AQUILÆ.

April	28	19 18 26.28
	29	26.26
	30	26.29
May	25	26.32
July	23	26.30
August	3	26.31

δ AQUILÆ—Continued.

1861.		h. m. s.
August	6	19 18 26.24
September	28	26.32
	30	26.23
October	5	26.33
	11	26.41
	12	26.24
	14	26.27
	18	26.29
	28	26.14

3 SAGITTÆ.

August	24	19 18 27.58

2 CYGNI.

September	12	19 18 36.22

4 VULPECULÆ.

August	20	19 19 19.85
September	2	19.89

B. A. C., 6665.

September	30	19 20 45.67

LACAILLE, 8120.

September	3	19 21 13.45
	13	13.40

(* 9) — 20° 42′.

August	1	19 23 14.70

A. Z. S., 241, 24.

October	5	19 23 19.15

e AQUILÆ.

September	12	19 23 20.34

B. A. C., 6680.

August	6	19 23 33.55

B A. C., 6684.

September	3	19 24 10.56
	13	10.57

(* 9) — 27° 21′.

September	28	19 24 23.37

LACAILLE, 8143.

September	30	19 24 33.49

(* 9) — 27° 20′.

September	28	19 25 17.14

(* 9) — 27° 20′.

1861.		h. m. s.
September	28	19 25 45.53

(* 9) — 27° 20′.

September	28	19 25 53.47

h MELPOMENE, —19° 53′.

July	23	19 25 57.12
August	3	57.10

B. A. C., 6694.

September	3	19 26 6.66

μ AQUILÆ.

September	12	19 27 14.87

LACAILLE, 8159.

September	30	19 27 34.54

h^2 SAGITTARII.

April	28	19 28 11.01
	29	10.92
	30	11.04
July	20	10.94
September	6	10.92
	13	10.98
October	3	11.00
	11	11.10
	12	10.92

9 VULPECULÆ.

August	20	19 28 25.94
September	2	25.82

LACAILLE, 8169.

August	6	19 28 57.90

A. Z. S., 235, 40.

October	5	19 29 7.38

B. A. C., 6716.

September	30	19 30 11.66

A. C., 19811.

August	1	19 30 17.63
	3	17.44

LALANDE, 37221.

July	20	19 31 35.45

σ AQUILÆ.

September	12	19 32 16.90

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(✡ 7.8) —25° 10′.

1861.		h. m. s.
September	30	19 33 5.78
October	3	5.49

A. Z. S., 394, 36.

October	5	19 33 6.78

e^1 Sagittarii.

October	12	19 33 41.96

B. A. C, 6738.

September	30	19 33 52.64

e^2 Sagittarii.

September	13	19 34 30.42
October	11	30.70

χ Aquilæ.

September	12	19 35 58.67

B. A. C., 6753.

September	6	19 36 31.81
	9	31.92

B. A. C., 6755.

September	3	19 37 4.80
	30	4.81

Lacaille, 8214.

September	30	19 37 38.87

f Sagittarii.

April	29	19 38 11.42
September	13	11.45

Lalande, 37507.

August	1	19 38 12.54

A. Z. S, 239, 69.

October	5	19 39 34.97

γ Aquilæ.

April	28	18 39 36.13
June	24	36.11
July	23	36.22
August	6	36.10
	24	36.11
September	14	36.13
October	3	36.11
	8	36.14
	12	36.14
November	7	36.11

(✡ 6) —29° 17′.

1861.		h. m. s.
September	30	19 40 27.10

δ Cygni.

August	20	19 40 35.91
September	2	35.88

B. A. C., 6777.

September	3	19 40 37.99

B A C., 6786.

August	24	19 41 46.73

B. A. C., 6795.

October	3	19 43 3.91

Lacaille, 8249.

September	30	19 43 49.24

α Aquilæ.

April	28	19 43 57.01
	30	57.05
July	20	57.04
August	6	57.08
September	2	57.06
	13	57.11
	14	57.07
October	8	57.08
	11	57.04
November	7	57.02
	30	57.06
December	6	57.07
	13	56.90
	19	57.09
	21	57.06
	30	56.97

(✡ 9.10) —22° 36′.

August	20	19 44 20.71
September	6	20.54

A. C., 20055.

October	18	19 46 5.65

Lalande, 37873.

July	23	19 47 14.66
August	1	14.64

ω Sagittarii.

September	30	19 47 15.55

β Aquilæ.

April	28	19 48 26.10
	30	26.10
June	24	26.11
July	20	26.06
August	3	26.07

β Aquilæ—Continued.

1861.		h. m. s.
August	6	19 48 26.14
September	2	26.06
	3	26.12
	12	26.05
	28	26.09
October	3	26.00
	5	26.07
	8	26.07
	12	26.07
	14	26.02
	23	26.04
	24	26.06
December	6	26.11
	21	26.16

(✡ 9.10) —17° 29′.

August	20	19 49 27.11

g Sagittarii.

September	13	19 50 0.37
	14	0.40

Lacaille, 8296.

September	30	19 51 18.46

B. A. C., 6854.

September	3	19 51 55.82

B. A. C., 6864.

October	3	19 53 4.42

Lalande, 38164.

July	23	19 53 53.63
August	1	53.65

c Sagittarii.

September	30	19 54 2.67

B. A. C., 6877.

August	6	19 55 26.55
September	3	26.62
	9	26.37
	12	26.38
	13	26.34

A. Z S., 239, 92.

August	3	19 55 46.49

B. A. C., 6886.

September	14	19 56 35.80

B. A. C., 6887.

October	3	19 56 38.13

B. A. C., 6888.

1861.		h. m. s.
September	28	19 56 39.15
October	12	39.12

Lalande, 38290.

July	23	19 56 56.22

A. C., 20217.

October	14	19 57 23.72
	23	23.86

B. A. C., 6899.

September	3	19 58 40.96
	13	40.95
	30	40.92
October	12	40.93

Lacaille, 8354.

October	3	20 0 26.10

(✡ 9.10) —16° 20′.

September	9	20 1 8.91

Lacaille, 8365.

September	3	20 2 2.25

λ Ursæ Minoris.

March	11 S. P.	20 3 53.52
	22 S. P.	50.14
June	24	55.11
July	23	56.95
August	1	57.34
	6	51.71
	20	56.67
	24	50.47
September	12	54.48
	13	56.51
	28	54.45
October	8	58.50
	23	51.69
	28	54.38
November	4	48.76
	21 S. P.	53.73

Lacaille, 8373.

September	30	20 4 43.01

A. C., 20322.

October	18	20 5 31.27

B. A. C., 6947.

September	3	20 6 33.03

A. C., 20337.

October	18	20 6 40.31
	23	40.37

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A. C., 20389.

1861.		h. m. s.
October	18	20 6 48.34

B. A. C., 6948.

September	9	20 7 8.22
	30	8.42

A. C., 20358-9.

October	18	20 8 23.29

A. C., 20366.

October	3	20 9 9.93
	23	10.05
	28	10.16

α^1 Capricorni.

September	2	20 9 52.98
	6	53.00
	12	53.00
	14	53.04
October	30	52.95

A. C., 20378.

October	8	20 9 58.00
	24	58.06

α^2 Capricorni.

September	2	20 10 16.98
	6	16.94
	12	16.94
	13	16.91
	14	16.99
October	14	17.05
	15	16.94
	30	16.87
November	4	17.04
	7	17.05
	8	17.06

Lacaille, 8399.

September	9	20 10 19.54
	28	19.60
	30	19.76

A. C., 20388.

October	12	20 10 42.77
	18	43.03

σ Capricorni.

July	23	20 11 18.70
August	24	18.67

A. C., 20423.

October	3	20 12 57.10
	8	57.08

β Capricorni.

June	24	20 13 8.58

A. Z. S., 240, 89.

1861.		h. m. s.
August	20	20 13 11.85

Lacaille, 8418.

September	28	20 13 59.26

(☉ 7. 8) — 29° 32′.

September	30	20 14 19.62

Lacaille, 8421.

September	12	20 14 45.23
	13	45.32

(☉ 7) — 30° 37′.

October	12	20 16 41.36

Lacaille, 8432.

September	28	20 17 3.55

B. A. C., 7026.

September	30	20 17 56.93

B. A. C., 7030.

September	12	20 18 53.97

π Capricorni.

November	7	20 19 18.26

B. A. C., 7032.

August	20	20 19 22.69

B. A. C., 7033.

October	3	20 19 29.64

ρ Capricorni.

June	24	20 20 52.27
August	6	52.39
September	6	52.12
	13	52.15
	14	52.22
October	12	52.21
	15	52.21
	23	52.35
	24	52.29
	30	52.19
November	4	52.33
	7	52.33
	8	52.35

B. A. C., 7044.

October	23	20 21 0.76
	20	0.63
November	4	0.74

A. Z. S., 240, 98.

1861.		h. m. s.
July	23	20 21 23.34
August	24	23.46

Lacaille, 8466.

September	12	20 22 21.95
	30	21.91
October	3	21.92

Lacaille, 8471.

September	28	20 23 50.73

Lacaille, 8485.

September	13	20 25 14.34
October	3	14.19
	15	14.28

Lacaille, 8487.

October	12	20 25 47.54

Lacaille, 8492.

September	6	20 26 8.67
	30	8.76

Weisse XX, 664.

August	20	20 26 56.11

B. A. C., 7093.

September	12	20 27 27.91
	28	27.89
October	15	27.81

B. A. C., 7108.

September	30	20 29 31.66

B. A. C., 7111.

September	13	20 29 31.90
October	3	31.86

(☉) — 32° 40½′.

October	30	20 30 23.73

B. A. C., 7184.

July	23	20 31 (8.31)
October	23	1.71
November	4	0.87

τ^2 Capricorni.

October	11	20 31 26.41
	12	26.34

Lacaille, 8517.

September	12	20 31 32.15
	28	32.25

B. A. C., 7128.

1861.		h. m. s.
August	24	20 31 51.72
September	6	51.46

υ Capricorni.

September	14	20 32 4.50
November	7	4.58

B. A. C., 7135.

October	15	20 32 8.27

B. A. C., 7139.

September	25	20 32 22.20
October	24	22.11
	28	22.24
November	4	22.23

Lacaille, 8529.

September	13	20 32 42 12
	30	42 27

α Delphini.

September	15	20 33 8.08

Weisse XX, 847.

October	3	20 33 27.92
	18	28.12

(☉) — 7° 21′.

October	14	20 33 28.39

Weisse XX, 849.

October	8	20 33 31.05
	12	31.05
	23	31.17

Lacaille, 8537.

September	12	20 34 44.06
	28	44.14

B. A. C., 7168.

September	13	20 36 6.80
	30	6.86

α Cygni.

October	11	20 36 39.40
November	18	39.47
December	9	39.47

Lacaille, 8546.

September	6	20 36 48.76

Weisse XX, 942.

October	3	20 36 58.52
	12	58.59

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B. A. C., 7181.

1861.		h. m. s.
September	12	20 38 4.37
	28	4.23

(* 9) — 10° 37′.

October	8	20 38 4.66
	14	4.94
	18	4.76
	24	4.54

(✡ 9. 10) — 10° 29′.

October	8	20 38 18.03
	24	18.17

(✡ 8. 9) — 28° 15′.

October	28	20 38 51.41
November	8	51.44

B. A. C., 7187.

September	13	20 38 58.43
	30	58.50

(✡ 8. 9) — 28° 10′.

October	28	20 39 27.18
November	8	27.13

ε Aquarii.

August	1	20 40 5.70
September	14	5.64
	15	5.69
	25	5.72
November	7	5.68

Lacaille, 8574.

September	6	20 40 43.94

B. A. C., 7205.

October	3	20 40 58.44

α Microscopii.

September	12	20 41 12.84
October	15	12.78

Weisse XX, 1059.

October	12	20 41 34.72
	18	35.02
	23	34.82

Lacaille, 8587.

September	13	20 42 8.31
	30	8.44

Lacaille, 8594.

September	28	20 43 9.29

ω Capricorni.

1861.		h. m. s.
September	25	20 43 27.64

(✡ 7. 8) — 18° 6′.

July	23	20 43 35.42

Lacaille, 8608.

September	14	20 44 34.07
October	3	34.09

Lacaille, 8610.

September	13	20 44 51.04

Lacaille, 8616.

September	30	20 45 42.32

Lacaille, 8619.

September	14	20 47 13.88
	28	13.95
October	3	13.91
	24	13.97

(✡ 7) — 32° 2′.

September	14	20 47 18.67
	28	18.73
October	3	18.78
	24	18.79

B. A. C., 7252.

September	6	20 48 27.69
	13	27.63

32 Vulpeculæ.

May	29	20 48 35.66
June	24	35.61
August	1	35.59
	20	35.54
	24	35.57
September	15	35.63
	23	35.54
	25	35.53
October	23	35.52
November	18	35.52

(✡ 9) — 12° 55′.

July	23	20 50 24.84

Lacaille, 8630.

September	12	20 51 8.72
October	15	8.63

Lacaille, 8632.

September	28	20 51 53.14

Lacaille, 8635.

October	12	20 52 3.26

Lacaille, 8640.

1861.		h. m. s.
September	14	20 52 35.22
October	3	35.28

(✡ 7. 8) — 30° 19′.

September	14	20 52 38.28
October	3	38.30

1 Piscis Australis.

September	6	20 52 41.58
	13	41.56
October	24	41.67

(✡ 7. 8) — 28° 13′.

November	7	20 52 59.31

Lacaille, 8647.

November	7	20 53 11.07

B. A. C., 7290.

September	25	20 53 18.77

(✡ 7) + 43° 52′.

September	25	20 53 43.80

Lacaille, 8658.

September	28	20 54 31.19
	30	31.15

B. A. C., 7300.

September	13	20 55 4.23

Lacaille, 8657.

October	15	20 55 6.82

(✡) — 28° 6′.

October	28	20 56 0.67
November	8	0.61

Lacaille, 8667.

October	12	20 56 16.08
	24	16.19

B. A. C., 7312.

September	14	20 56 59.58

δ Microscopii.

August	24	20 57 33.51
September	6	33.25
	12	33.25
	28	33.35
October	3	33.31

θ Capricorni.

1861.		h. m. s.
June	24	20 58 4.40
September	15	4.46

Lacaille, 8691.

August	20	20 59 4.01
September	13	3.80

B. A. C., 7332.

November	18	20 59 30.89

(✡ 7) — 22° 53′.

September	23	20 59 51.49

Lacaille, 8701.

September	6	21 0 36.61
	28	36.62
	30	36.61
October	3	36.65

61¹ Cygni.

September	25	21 0 37.25
October	23	37.21
	28	37.31
November	4	37.22
	7	37.27

61² Cygni.

September	25	21 0 38.73
October	23	38.76
November	7	38.75

Lacaille, 8706.

September	12	21 1 46.16

(✡ 7. 8) — 23° 00′.

September	23	21 1 54.85

ν Aquarii.

June	24	21 1 57.82
September	15	58.03
October	12	57.86

B. A. C., 7347.

September	23	21 2 26.18

B. A. C., 7349.

October	15	21 3 13.26
	24	13.40

3 Piscis Australis.

August	20	21 4 58.81
September	6	58.75
	14	58.71
	28	58.68
	30	58.80

Hosted by Google

B. A. C., 7359.

1861.		h.	m.	s.
October	3	21	5	8.81

(✡ 8) — 25° 28′.

October	3	21	5	18.22

LACAILLE, 8736.

September	12	21	5	36.12
	25			36.10

LACAILLE, 8737.

October	15	21	6	.87

Seconds not recorded.

LACAILLE, 8741.

October	28	21	6	33.01

ζ CYGNI.

July	3	21	6	58.56
	23			58.59
August	1			58.69
	24			58.71
September	13			58.67
	23			58.70
November	11			58.61
December	16			58.52
	19			58.63

LACAILLE, 8742.

October	24	21	7	3.12

LACAILLE, 8758.

August	20	21	9	0.33
September	6			0.10
	14			0.21
	28			0.16
	30			0.18
October	3			0.17

(✡ 7) — 39° 23′.

October	15	21	9	2.27

4 PISCIS AUSTRALIS.

September	25	21	9	26.34

LACAILLE, 8769.

October	24	21	10	37.49
	28			37.47

LACAILLE, 8777.

September	6	21	11	39.37

LACAILLE, 8787.

August	20	21	13	29.88
September	28			29.81
October	3			29.81
November	7			30.10

LACAILLE, 8790.

1861.		h.	m.	s
October	15	21	14	21.01
November	7			21.19

ι CAPRICORNI.

July	23	21	14	26.68
October	12			26.72

LACAILLE, 8791.

October	24	21	14	49.04

B. A. C., 7413.

September	6	21	14	58.47
October	28			58.62

α CEPHEI.

September	14	21	15	14.03
	23			14.12
	30			14.23
October	8			14.18
	11			14.17

LACAILLE, 8804.

September	28	21	16	40.96

B. A. C., 7434.

September	6	21	17	40.53

LACAILLE, 8821.

August	20	21	19	19.33
September	30			19.32
October	28			19.48
November	7			19.45

A. C., 21404.

October	3	21	20	9.25
	15			9.24
	18			9.31

5 PISCIS AUSTRALIS.

September	6	21	20	41.04

LACAILLE, 8824.

October	24	21	21	7.49

B. A. C., 7467.

September	28	21	22	20.39

LACAILLE, 8834.

November	7	21	22	37.40

(✡ 7) — 25° 56′.

August	20	21	23	33.90
October	15			33.92

LACAILLE, 8839.

1861.		h.	m.	s.
August	20	21	23	45.35
October	15			45.20

β AQUARII.

June	26	21	24	11.17
July	23			11.15
September	12			11.16
	25			11.18
	30			11.14
October	8			11.14
	11			11.24
	12			11.13
	18			11.11
November	23			11.11
December	6			11.09
	19			11.18
	21			11.10

LACAILLE, 8849.

September	6	21	26	36.87
	28			36.88
	30			37.07

B. A. C., 7504.

November	7	21	26	48.24

β CEPHEI.

September	14	21	26	50.26
	23			50.30
November	23			50.14

A. C., 21492.

October	3	21	27	54.70
	18			54.89

8 PISCIS AUSTRALIS.

October	8	21	28	3.45

7 PISCIS AUSTRALIS.

August	20	21	28	23.72

A. C., 21497.

October	15	21	28	26.13
	24			26.25

B. A. C., 7508.

November	8	21	29	9.69

LACAILLE, 8862.

September	6	21	30	9.29
	30			9.44

ξ AQUARII.

June	26	21	30	17.79
December	6			17.70

Σ CAT. GEN., 2611.

1861.		h.	m	s.
October	3	21	30	22.26
	18			22.22

LACAILLE, 8867.

September	28	21	30	40.27

LACAILLE, 8870.

September	25	21	30	58.06
October	8			57.94

γ CAPRICORNI.

July	23	21	32	19.71

(✡ 7) — 33° 8′.

September	6	21	33	17.87
	25			18.08
	28			18.06

LACAILLE, 8890.

September	30	21	33	44.22
November	8			44.48

LACAILLE, 8889.

September	6	21	33	52.12
	25			52.27
	28			52.06

LACAILLE, 8891.

October	8	21	33	56.46

B. A. C., 7538.

November	7	21	34	5.37

LACAILLE, 8902.

October	8	21	36	31.47

ι PISCIS AUSTRALIS.

September	23	21	36	35.74

COMPANION OF ε PEGASI.

November	4	21	37	13.11
	11			13.02

ε PEGASI.

June	27	21	37	18.49
August	20			18.51
October	11			18.56
	24			18.52
November	4			18.41
	11			18.75
	23			18.53
December	7			18.53

LACAILLE, 8907.

September	30	21	37	20.83

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LACAILLE, 8906.

1861.		h. m. s.
September	6	21 37 22.91
	28	22.93

μ CYGNI.

July	23	21 37 52.91

LACAILLE, 8911.

September	14	21 38 4.54
	25	4.71
November	7	4.82

WEISSE XXI, 916.

October	3	21 38 11.14
	18	11.29

LACAILLE, 8918.

September	23	21 39 35.09
October	8	35.07

LACAILLE, 8923.

September	28	21 40 7.48

LACAILLE, 8929.

November	7	21 41 29.56

LACAILLE, 8934.

August	20	21 41 48.99
September	14	48.94
	25	49.01
October	24	49.00

LACAILLE, 8937.

October	8	21 42 40.52
	15	40.46

LACAILLE, 8941.

September	23	21 43 26.15
	28	26.13

WEISSE XXI, 1033.

October	18	21 43 58.91

LACAILLE, 8947.

September	30	21 44 25.50

μ CAPRICORNI.

October	18	21 45 39.57

(✡ 7) —36° 41′.

October	8	21 46 4.25

15 PEGASI.

1861.		h. m. s.
October	3	21 46 14.79

16 PEGASI.

June	26	21 46 41.53
October	11	41.51
November	8	41.42
December	7	41.50

LACAILLE, 8965.

August	20	21 47 45.28
September	6	45.16
	14	45.20
	23	45.36
	25	45.24
	28	45.26
	30	45.12
November	7	45.37

B. A. C., 7632.

October	15	21 47 56.38
	24	56.59

LACAILLE, 8968.

October	3	21 49 2.20
	8	2.17

B. A. C., 7647.

October	24	21 50 49.34

LACAILLE, 8981.

August	20	21 51 26.36
September	6	26.12
	14	26.15
	23	26.25
	25	26.25
	28	26.22

11 PISCIS AUSTRALIS.

September	30	21 51 32.74
October	3	32.71

LACAILLE, 8985.

October	8	21 51 45.21
November	7	45.39

LACAILLE, 9000.

September	14	21 54 22.58
	23	22.56
	25	22.59

LACAILLE, 9003.

September	28	21 54 41.57
	30	41.58
October	4	41.58

29 AQUARII, (2d ✡.)

October	18	21 54 45.78

LACAILLE, 9004.

1861.		h. m. s.
September	6	21 55 10.71
October	8	10.66

LACAILLE, 9007.

October	3	21 55 35.08

(✡) —26° 21′.

October	15	21 55 35.11

LACAILLE, 9006.

November	4	21 55 54.88

13 PISCIS AUSTRALIS.

September	25	21 56 19.04

LALANDE, 43040.

June	27	21 58 5.88

WEISSE XXI, 1333.

October	18	21 58 7.54
November	7	7.51
	23	7.42

α AQUARII.

July	24	21 58 35.48
August	23	35.47
September	6	35.47
	14	35.46
	23	35.47
	28	35.46
	30	35.46
October	3	35.42
	4	35.45
	11	35.47
	12	35.41
	14	35.48
	15	35.50
	24	35.48
November	30	35.45
December	7	35.55
	30	35.40

ι AQUARII.

August	20	21 58 52.41

α GRUIS.

November	4	21 59 23.61

(✡ 7) — 30° 21′.

October	8	21 59 49.23

WEISSE XXI, 1384.

October	18	22 0 19.43
November	7	19.45
	23	19.36

LACAILLE, 9036.

1861.		h. m. s.
September	25	22 1 44.35

B A. C., 7715.

September	14	22 2 0.68
October	4	0.61

WEISSE XXII, 13.

October	18	22 2 5.86
November	23	5.85

LACAILLE, 9045.

October	24	22 3 6.42

B. A. C., 7729.

August	20	22 3 30.86
September	23	30.81
	28	30.81
	30	30.67
October	3	30.72
	8	30.76

LACAILLE, 9052.

October	15	22 4 4.27

B. A. C., 7739.

September	25	22 4 41.43
	30	41.21
October	4	41.29
November	8	41.45
December	6	41.48

39 AQUARII.

June	26	22 4 52.45

B. A. C., 7745.

October	12	22 5 51.99
November	4	52.08

θ AQARII.

June	27	22 9 26.56
July	23	26.56
	24	26.57
August	20	26.67
September	6	26.59
	14	26.56
	17	26.63
	23	26.59
	25	26.56
	28	26.58
	30	26.60
October	4	26.55
	8	26.58
	12	26.63
	15	26.59
	18	26.62
	24	26.64
November	7	26.66
	8	26.59
	11	26.57
	23	26.56
	30	26.64
December	6	26.52
	7	26.64

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LACAILLE, 9091.

1861.		h. m. s.
October	14	22 10 3.58

(☄) COMET II, 1861, + 66° 0′.

July	3	22 11 2.12

ρ AQUARII.

June	27	22 12 49.75
August	20	49.80
September	6	49.81
	23	49.70
	25	49.76
	28	49.75
	30	49.71
October	12	49.73
	15	49.76
	18	49.75
November	7	49.84
	30	49.80
December	7	49.82

LACAILLE, 9109.

September	14	22 14 5.85
October	8	5.88

LALANDE, 43630.

October	11	22 14 18.78

γ AQUARII.

July	23	22 14 25.45
	24	25.39
September	17	25.46

LACAILLE, 9113.

November	8	22 15 21.30

LACAILLE, 9126.

September	28	22 16 49.05
October	12	49.05
	15	49.09

LACAILLE, 9127.

September	14	22 16 55.88
	23	55.87
October	8	55.95

B. A. C., 7809.

October	18	22 17 22.35

LACAILLE, 9130.

September	25	22 18 15.41

LACAILLE, 9131.

October	3	22 18 18.44

B. A. C., 7817.

1861.		h. m. s.
November	11	22 18 25.81
December	6	25.75

B. A. C., 7818.

October	18	22 18 57.75

53 AQUARII.

October	18	22 18 58.17

LACAILLE, 9135.

September	14	22 19 50.41
	28	50.43
October	8	50.36

LACAILLE, 9139.

October	14	22 20 59.14

LACAILLE, 9144.

August	20	22 21 33.88
September	23	33.79
	25	33.83

ζ^1 AQUARII.

June	27	22 21 37.34
December	7	37.31

ζ^2 AQUARII.

December	7	22 21 37.39

LACAILLE, 9151.

October	3	22 21 55.49
	12	55.51

WEISSE XXII, 467.

November	4	22 22 34.67

LACAILLE, 9159.

September	28	22 23 5.26

LACAILLE, 9163.

October	8	22 23 41.73

(☄) + 6° 32′.

December	4	22 23 51.28

B A. C., 7851.

November	7	22 23 53.74
	8	52.17

(☄ 9) + 6° 42′.

December	5	22 24 6.09

WEISSE XXII, 518.

1861.		h. m. s.
December	4	22 25 2.42

α LACERTA.

October	4	22 25 31.60

LACAILLE, 9169.

September	14	22 25 41.31
	23	41.32
	25	41.37
October	3	41.29
	15	41.39

η AQUARII.

June	26	22 28 9.68
	27	9.69
July	3	9.72
	23	9.68
	24	9.64
	25	9.65
August	23	9.67
September	17	9.61
	28	9.64
October	3	9.63
	8	9.64
	14	9.63
	15	9.64
	18	9.59
November	4	9.66
	11	9.66
	13	9.59
December	7	9.66
	13	9.55

B. A. C., 7872.

September	14	22 28 41.94

(☄ 7) — 32° 22′.

September	14	22 28 45.35

WEISSE XXII, 601.

December	4	22 29 9.23
	6	9.28

LACAILLE, 9190.

September	25	22 30 5.24

κ AQUARII.

August	20	22 30 30.28

WEISSE XXII, 645.

December	4	22 30 59.39
	6	59.27

LALANDE, 44223.

October	18	22 31 1.26
November	4	(0.27)
	7	1.45

WEISSE XXII, 658.

1861.		h. m. s.
December	6	22 31 27.05

LALANDE, 44272.

December	5	22 31 50.50
	7	50.69

LALANDE, 44279.

December	5	22 31 59.06
	7	59.19

WEISSE XXII, 675.

July	24	22 32 10.56
November	8	10.59
	23	10.55

B. A. C., 7895.

September	14	22 32 32.94

ε PISCIS AUSTRALIS.

October	15	22 32 54.27

ζ PEGASI.

June	27	22 34 28.76
July	25	28.79
August	20	28.74
	23	28.72
September	17	28.73
	18	28.77
	23	28.71
	25	28.73
October	3	28.79
	4	28.71
	14	28.80
November	8	28.70
	13	28.74
December	19	28.76

WEISSE XXII, 761.

October	18	22 35 53.83
November	4	53.86

LACAILLE, 9244.

September	14	22 39 2.55

LACAILLE, 9246.

August	20	22 39 16.17

B. A. C., 7950.

August	23	22 40 13.91

LACAILLE, 9256.

October	15	22 40 14.74
November	8	14.81
December	6	14.81

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LACAILLE, 9261.

1861.		h. m. s.
November	7	22 40 46.04

(✲) + 57° 47′.

October	18	22 40 54.51

(Minutes doubtful.)

B. A. C., 7953.

December	4	22 41 49.69

(✲ 6) — 33° 35′.

July	24	22 42 10.46

τ^2 AQUARII.

November	12	22 42 10.60
	13	10.42
December	7	10.68

(✲) — 14° 22′.

October	4	22 42 33.62

μ PEGASI.

October	11	22 43 14.81
December	5	14.66

LACAILLE, 9286.

October	15	22 44 32.66

γ PISCIS AUSTRALIS.

July	24	22 44 44.04

LACAILLE, 9290.

November	7	22 44 59.19

λ AQUARII.

August	20	22 45 18.56

LACAILLE, 9296.

October	4	22 46 41.82

75 AQUARII.

July	25	22 46 43.86

δ AQUARII.

October	11	22 47 12.93

LACAILLE, 9298.

October	14	22 47 22.77
December	6	22.94

B. A. C., 7990.

October	18	22 47 54.62

LACAILLE, 9307.

1861.		h. m. s.
October	15	22 48 36.17
November	7	36.24

α PISCIS AUSTRALIS.

June	27	22 49 54.37
July	3	54.35
September	14	54.36
	17	54.33
	18	54.30
October	4	54.43
November	4	54.47
	5	54.46
	8	54.54
	12	54.38
	13	54.42
December	5	54.46
	6	54.51
	9	54.48
	13	54.49
	16	54.52

LALANDE, 44877.

July	25	22 50 6.48

WEISSE XXII, 1082.

December	7	22 52 11.65

LACAILLE, 9333.

October	4	22 53 40.23
November	7	40.32

81 AQUARII.

October	14	22 54 6.85
	15	6.91

(✲ 10) — 20° 58′.

November	8	22 54 23.78
	12	23.23

WEISSE XXII, 1159.

December	5	22 55 12.14
	7	12.26

B. A. C., 8026.

December	9	22 55 21.98

o ANDROMEDÆ.

October	11	22 55 29.08

LACAILLE, 9356.

October	4	22 56 4.50

β PISCIUM.

July	24	22 56 45.01
	25	45.08
October	15	45.04

WEISSE XXII, 1203.

1861.		h. m. s.
October	14	22 57 6.86
	18	6.98
November	4	6.96

α PEGASI.

August	23	22 57 47.30
November	13	47.28
December	9	47.28

GROOMBRIDGE, 3975.

November	23	22 58 13.80

LACAILLE, 9373.

October	4	22 59 20.10

(✲ 8) + 66° 33′.

December	16	22 59 41.94

WEISSE XXIII, 12.

December	7	23 2 19.13

WEISSE XXIII, 14.

December	7	23 2 25.21

ι GRUIS.

November	8	23 2 25.24

89 AQUARII.

October	14	23 2 25.84
December	4	25.91

LACAILLE, 9388.

October	15	23 3 11.99

π CEPHEI.

October	18	23 3 27.49
December	6	27.36
	9	26.93
	13	26.63

LACAILLE, 9391.

October	4	23 3 40.01

(✲ 7) — 27° 39′.

October	4	23 3 41.63

59 PEGASI.

December	10	23 4 40.06

(✲ 8.9) + 8° 2′.

December	10	23 4 46.48

7 ANDROMEDÆ.

1861.		h. m. s.
July	25	23 6 8.85
August	23	8.66

WEISSE XXIII, 88.

October	29	23 6 15.33
November	7	15.54

(✲ 10) — 7° 7′.

October	29	23 6 29.36

ϕ AQUARII.

October	14	23 7 4.18
	18	4.25
November	5	4.24
	12	4.24

(✲ 7) — 39° 55′.

December	5	23 7 12.47

LACAILLE, 9411.

October	4	23 7 50.50

LALANDE, 45473.

October	31	23 8 8.03

(✲ 8) — 40° 01′.

December	5	23 8 21.47

PIAZZI XXIII, 21.

December	7	23 8 28.76

γ PISCIUM.

July	24	23 9 54.47
	25	54.37
September	17	54.50
October	14	54.36
	15	54.45
	18	54.56
	29	54.46
	31	54.46
November	4	54.50
	5	54.47
	8	54.43
December	9	54.46
	10	54.43

ψ^2 AQUARII.

August	23	23 10 37.50

LACAILLE, 9436.

September	17	23 11 22.46
October	4	22.40

(✲ 7) — 39° 54′.

December	5	23 11 45.18

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LACAILLE, 9447.

1861.		h. m. s.
November	7	23 12 36.78

B. A. C., 8129.

July	24	23 13 27.64

LALANDE, 45704.

November	4	23 13 34.27
	8	34.24

LACAILLE, 9453.

October	4	23 15 24.71

LACAILLE, 9458.

October	15	23 16 14.05

B. A. C., 8154[1].

October	18	23 16 29.70
December	6	29.61
	13	29.52

B. A. C., 8154[2].

October	18	23 16 30.13
December	6	(30.59)
	13	30.06

WEISSE XXIII, 342.

November	4	23 17 21.28
	7	21.50
	8	21.35
	11	21.37

ν PEGASI.

August	23	23 18 23.56

LACAILLE, 9473.

October	4	23 18 44.96

κ PISCIUM.

July	24	23 19 45.34
	25	45.28
September	17	45.29
	18	45.29
	19	45.36
October	15	45.32
	31	45.34
November	5	45.18
	11	45.40
	12	45.28
	30	45.31
December	5	45.19
	10	45.36

9 PISCIUM.

November	30	23 20 4.46

SANTINI, 1633.

1861.		h. m. s.
October	18	23 21 8.60
	29	8.62
November	4	8.63
	8	8.57

WEISSE XXIII, 419.

November	18	23 21 20.81

SANTINI, 1635.

October	29	23 22 24.69

WEISSE XXIII. 443.

December	7	23 22 25.14

WEISSE XXIII, 449.

December	7	23 22 45.94

LACAILLE, 9497.

October	4	23 22 54.02

LACAILLE, 9496.

October	14	23 23 3.04

WEISSE XXIII, 458.

November	8	23 23 14.53
	11	14.64
	18	14.52

b[3] AQUARII.

August	23	23 24 21.33
December	10	21.44

B. A. C., 8196.

July	24	23 24 28.26

(☉ 7) — 22° 38.

September	17	23 24 48.30

WEISSE XXIII, 528.

October	29	23 27 26.49
November	21	26.47
	30	26.45
December	13	26.50

B. A. C., 8213.

November	5	23 27 48.33
	7	49.83
December	5	48.49
	6	47.97
	23 S. P.	49.51
	24	50.50

WEISSE XXIII, 539.

December	13	23 27 50.87

LACAILLE, 9527.

1861.		h. m. s.
October	4	23 28 16.61

B. A. C., 8214.

December	10	23 28 18.71

LACAILLE, 9534.

September	17	23 29 40.81

WEISSE XXIII, 609.

October	28	23 29 59.46
	31	59.73
November	8	59.62

WEISSE XXIII, 613.

October	28	23 30 5.15
	31	5.22
December	11	5.28

B. A. C., 8225.

December	10	23 30 46.31

LAMONT, 2822.

November	8	23 31 0.63
	11	0.66

LAMONT, 2823.

October	28	23 31 5.00
November	4	5.26
	8	4.97
	11	5.17

ι ANDROMEDÆ.

August	23	23 31 16.68

LAMONT, 2824.

October	18	23 32 16.39
November	7	16.30
December	11	16.29

LACAILLE, 9547.

September	17	23 32 26.79
October	4	26.78

ι PISCIUM.

July	25	23 32 45.05
September	18	45.08
	19	45.07
October	15	45.01
	29	45.04
November	18	45.00
December	7	45.03

WEISSE XXIII, 679.

December	13	23 33 23.06

WEISSE XXIII, 683.

1861.		h m. s.
December	13	23 33 31.32

WEISSE XXIII, 685.

November	11	23 33 34.46
December	13	34.39

γ CEPHEI.

November	13	23 33 37.81
	30	37.69
December	23 S. P.	37.87

A[1] AQUARII.

December	10	23 34 18.67

λ PISCIUM.

August	23	23 34 54.13

B. A. C., 8247.

September	19	23 35 26.59

LACAILLE, 9568.

September	17	23 35 42.37
October	4	42.38

WEISSE XXIII, 749.

October	28	23 36 59.02
November	4	59.09

i[2] AQUARII.

December	10	23 38 44.42

WEISSE XXIII, 783.

October	15	23 38 49.82
	18	49.90
	29	49.91
	31	49.86
November	4	49.72
	7	49.85

τ CASSIOPELÆ.

August	23	23 40 13.58

WEISSE XXIII, 817.

October	18	23 40 31.71

20 PISCIUM.

July	25	23 40 44.69

WEISSE XXIII, 830.

October	18	23 41 1.72

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(✡ 7. 8) — 28° 40′.

1861.		h. m. s.
October	4	23 41 2.64

δ Sculptoris.

October	28	23 41 37.66
November	8	37.73
December	3	37.79
	6	37.69
	11	37.67
	18	(37.56)

B. A. C., 8280.

September	19	23 42 2.99

Lacaille, 9605.

September	17	23 42 3.64
October	4	3.71

Weisse XXIII, 870.

October	15	23 42 59.04

B. A. C., 8287.

December	10	23 43 19.60

(✡ 9. 10) Encke's Comet, + 7° 20′.

October	29	23 43 19.92
November	11	20.00

Lacaille, 9625.

September	17	23 44 37.82

82 Pegasi.

1861.		h. m. s.
November	5	23 45 28.77

Weisse XXIII, 916.

November	4	23 45 32.30
December	6	32.40
	11	32.41
	13	32.28
	16	32.45

Lacailee, 9636.

October	4	23 46 28.74

26 Piscium.

December	9	23 47 58.09
	10	58.13

B. A. C., 8314.

September	19	23 48 3.69

Rumker, 11777.

November	5	23 49 37.28

Lacaille, 9663.

September	17	23 50 23.90
October	4	23.83

σ Cassiopeiæ.

December	12	23 51 55.22
	18	55.21

ω Piscium.

1861.		h. m. s.
September	18	23 52 7.42
	19	7.38
October	15	7.42
	28	7.20
November	4	7.28
	7	7.36
	21	7.43
	26	7.42
December	3	7.39
	9	7.42
	10	7.42
	11	7.39
	27	7.41

B. A. C., 8336.

August	23	23 53 2.47
October	18	2.45
	24	3.67
	29	1.81
November	8	1.88
December	6	2.43
	24	3.28

Lacaille, 9695.

September	17	23 54 10.35
October	4	10.40

29 Piscium.

July	25	23 54 38.90
	26	38.88

c^1 Piscium.

October	18	23 55 14.05
	28	13.93
November	4	14.02
	11	14.00
December	3	14.07

Lacaille, 9706.

1861.		h. m. s.
September	17	23 57 10.11
October	4	9.98

Lacaille, 9707.

September	17	23 57 12.83
October	4	12.79

Weisse XXIII, 1179.

September	18	23 57 36.23

Weisse XXIII, 1180.

December	27	23 57 40 00

Weisse XXIII, 1196.

November	26	23 58 23.21

Weisse XXIII, 1201.

October	14	23 58 48.51

Weisse XXIII, 1208.

September	19	23 59 6.95

Weisse XXIII, 1222.

July	25	23 59 53.80
September	20	53.88
December	27	53.81
	30	53.74

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MEAN DECLINATIONS

OF

STARS OBSERVED FOR 1860·0

WITH THE

MURAL CIRCLE,

1861.

Hosted by Google

Lacaille, 9726, A. R., 0h. 0. 1m.

		° ′ ″
December	13	−38 42 31.20
	16	31.05

Lacaille, 9732, A. R., 0h. 0. 6m.

November	21	−23 17 9.92
	26	9.30

Lacaille, 9737, A. R., 0h. 1. 7m.

November	19	−30 44 0.19
	21	4.25

Weisse XXIII, 1267, A. R., 0h. 1. 7m.

November	7	− 0 5 10.13
December	5	11.80

Weisse XXIII, 1269, A. R., 0h. 1. 8m.

November	4	+12 1 35.50
	8	35.00

Weisse, O. 4, A. R., 0h. 2. 0m.

November	4	+12 1 56.65
	8	55.86

Lacaille, 9753, A. R., 0h. 3. 7m.

December	11	−35 38 24.32
	13	25.56

Santini, 8, A. R., 0h. 4. 6m.

November	4	+ 8 21 43.61
	8	43.18

Lacaille, 1, A. R., 0h. 5. 7m.

December	27	−43 56 35.39
	30	37.21

Lacaille, 4, A. R., 0h. 6. 2m.

December	27	−43 50 43.64
	30	38.03

Lacaille, 5, A. R., 0h. 6. 2m.

December	21	−27 6 21.91

B. A. C., 27, A. R., 0h. 6. 2m.

December	5	−38 36 2.20
	12	5.61

Anonymous, A. R., 0h. 6. 3m.

November	26	−38 41 7.46

Lacaille, 9, A. R., 0h. 6. 7m.

December	21	−27 3 57.52

B. A. C., 37, A. R., 0h. 8. 0m.

		° ′ ″
December	11	−35 40 58.65
	13	58.06

B. A. C., 41, A. R., 0h. 8. 4m.

October	23	−41 13 47.37
November	11	51.10

Lacaille, 26, A. R., 0h. 9. 6m.

December	16	−33 32 19.15
	18	22.37

B. A. C., 49, A. R., 0h. 9. 8m.

December	16	−33 27 57.29
	18	59.58

Weisse, O. 202, A. R., 0h. 12. 7m.

October	28	+12 36 58.39
	29	55.53

Weisse, O. 229, A. R., 0h. 13. 7m.

October	14	+11 59 40.84
	15	39.94

Weisse, O. 233, A. R., 0h. 14. 0m.

October	14	+11 56 10.49
	15	11.62

Lacaille, 78, A. R., 0h. 18. 1m.

December	27	−31 27 45.11
	30	45.61

45 Piscium, A. R., 0h. 18. 5m.

October	14	+ 6 55 3.66
	15	3.45

Lacaille, 84, A. R., 0h. 19. 0m.

December	27	−31 31 24.92
	30	26.15

Weisse, O. 436, A. R., 0h. 26. 2m.

October	28	+ 8 58 53.77
	31	52.03

Santini, 31, A. R., 0h. 26. 9m.

November	4	+ 9 31 53.23
	7	60.17

Weisse, O. 476, A. R., 0h. 28. 3m.

November	4	+ 7 22 33.62
	8	34.02

Weisse, O. 491, A. R., 0h. 29. 2m.

October	18	+ 8 6 14.57
	23	15.46

Weisse, O. 510, A. R., 0h. 30. 5m.

		° ′ ″
October	28	+ 7 15 5.59

Lacaille, 155, A. R., 0h. 31. 4m.

December	27	−42 21 43.54
	30	47.36

α Cassiopeæ, A. R., 0h. 32. 6m.

September	22	+55 46 7.36
November	11	7.51

Lacaille, 164, A. R., 0h. 33. 2m.

December	27	−42 25 34.12
	30	37.02

21 Cassiopeæ, A. R., 0h. 36. 5m.

December	5	+74 13 20.09
	6	20.44
	7	20.71
	18	18.66

β Ceti, A. R., 0h. 36. 6m.

September	20	−18 45 18.89

Lacaille, 241, A. R., 0h. 46. 3m.

December	27	−25 32 20.29
	30	21.89

Weisse, O. 820, A. R., 0h. 47. 7m.

October	18	− 1 33 12.67
	23	10.08

B. A. C., 277, A. R. 0h. 52. 7m.

September	22	−35 23 36.26
October	24	34.66
November	19	35.64

Weisse I, 100, A. R., 1h. 7. 6m.

November	11	+ 9 0 0.23
	18	0.28
	19	1.42

Polaris, A. R., 1h. 8. 0m.

September	12	S. P.	+88 33 47.14
	19		47.75
	20		48.18
	22		47.71
	23	S. P.	46.91
	24	S. P.	47.76
	24		46.06
	25	S. P.	46.95
	27		46.71
	28	S. P.	47.85
	30	S. P.	46.50
	30		47.30
October	3	S. P.	46.42
	4	S. P.	46.17
	5	S. P.	45.76
	7	S. P.	45.65

Polaris, A. R., 1h. 8. 0m.—Contin'd.

			° ′ ″
October	12	S. P.	+88 33 45.92
	13	S. P.	47.58
	14		48.68
	14	S. P.	45.37
	15		47.17
	18		48 54
	23		47.92
	23	S. P.	44.91
	24		48.76
	24	S. P.	46.76
	27	S. P.	47.23
	28		46.81
	28	S. P.	46.65
	29		48.28
	31		47.31
	31	S. P.	47.03
November	3	S. P.	48.06
	4		47.67
	6	S. P.	47.38
	7		46.88
	7	S. P.	47.34
	8		48.06
	11		48.45
	11	S. P.	46.84
	12	S. P.	48.65
	13		48.27
	13	S. P.	46.53
	16		47.12
	17	S. P.	47.19
	18		48.10
	18	S. P.	46.61
	19		46.87
	20	S. P.	46.42
	21		47.51
	26		47.23
December	4		47.78
	5		47.18
	6		48.13
	7		47.25
	9		47.92
	11		45.99
	12		47.31
	13		47.82
	14		48.02
	17		47.67
	19		47.17
	30		47.37

Weisse I, 113, A. R., 1h. 8. 4m.

November	11	+ 9 2 33.54
	18	32.75
	19	35.66

Weisse I, 189, A. R., 1h. 10. 1m.

December	13	+ 1 16 32.87
	16	32.19

Weisse I, 197, A. R., 1h. 13. 1m.

December	13	+ 1 45 8.68
	16	7.59

A Cassiopeæ, A. R., 1h. 20. 9m.

December	12	+69 32 31.81
	19	32.17
	30	32.01

Weisse I, 569, A. R., 1h. 32. 9m.

December	13	+11 10 11.37
	16	8.46

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ANONYMOUS, A. R., 1h. 33. 8m.

	° ′ ″
December 13	+11 23 14.54
16	15.60

WEISSE I, 607, A. R., 1h. 34. 1m.

November 11	+ 3 47 10.13
13	10.93

WEISSE I, 628, A. R, 1h. 35. 0m.

November 11	+ 3 43 19.89
13	22.01

B. A. C., 547, A. R., 1h. 40. 8m.

September 22	+47 11 52.19

ANONYMOUS, A. R., 1h. 42. 4m.

November 11	+13 43 7.06

ANONYMOUS, A. R., 1h. 42. 4m.

November 19	+13 39 8.97

WEISSE I, 1050, A. R., 1h. 59. 4m.

November 11	+13 54 52.17
December 11	50.85

WEISSE I, 1056, A. R., 1h. 59. 6m.

December 18	+ 3 14 8.27
30	5.70

ARG. Z., 145, 126, A. R., 2h. 2. 8m.

November 18	+48 56 10.20

WEISSE II, 64, A. R., 2h. 5. 3m.

December 18	+13 35 3.11
30	3.69

B. A. C., 687, A. R., 2h. 6. 1m.

December 4	+ 4 21 25.53
11	25.24

RUMKER, 568, A. R., 2h. 7. 7m.

November 11	+17 15 50.90
13	50.07

SANTINI, 138, A. R., 2h. 17. 0m.

December 30	+ 9 4 43.88

ι CASSIOPELÆ, A. R., 2h. 17. 6m.

November 18	+66 46 13.75
December 4	13.20

B. A. C., 740, A. R., 2h. 17. 7m.

	° ′ ″
September 22	+81 1 9.17
November 11	11.28
13	10.97

B. Z., 27, 25, A. R., 2h. 19. 0m.

November 11	+22 14 48.98
13	48.04

B. Z., 27, 26, A. R., 2h. 19. 2m.

November 11	+22 16 22.19
December 18	20.79

WEISSE II, 333, A. R., 2h. 20. 9m.

December 30	+ 5 25 40.30

WEISSE II, 415, A. R., 2h. 25. 5m.

November 19	+ 3 7 8.77

WEISSE II, 455, A. R., 2h. 27. 9m.

November 18	+ 3 30 46.48
December 18	47.83

WEISSE II, 556, A. R., 2h. 32. 9m.

December 13	+15 5 0.27
18	1.64

WEISSE II, 575, A. R., 2h. 33. 7m.

December 13	+15 2 25.93
16	25.88

WEISSE II, 585, A. R., 2h. 34. 1m.

November 13	+ 3 49 42.08
18	40.91

B. Z., 391, A. R., 2h. 36. 8m.

December 6	+21 1 12.75
13	12.79

ANONYMOUS, A. R, 2h. 36. 9m.

December 27	—28 32 58.59

LACAILLE, 846, A. R, 2h. 37. 7m.

December 27	—28 29 40.50

ANONYMOUS, A. R., 2h. 40. 0m.

November 19	+24 29 40.93

B. A. C., 866, A. R., 2h. 40. 6m.

November 18	+24 37 6.14

γ² FORNACIS, A. R., 2h. 43. 8m.

	° ′ ″
December 27	—28 31 27.42

ANONYMOUS, A. R., 2h. 48. 4m.

December 6	+14 47 51.53
16	50.67

ANONYMOUS, A. R., 2h. 48. 6m.

December 6	+14 47 44.91
16	44.58

RUMKER, 755, A. R, 2h. 50. 5m.

November 19	+15 25 48.57

B. Z, 27, A. R., 2h. 55. 3m.

December 6	+22 30 33.32
16	32.70

ρ PERSEI, A. R., 2h. 56. 8m.

January 4	+38 17 41.11

48 CEPHEI, A. R, 3h. 2. 7m.

December 4	+77 12 51.04
6	49.93

B. Z., 448, 4, A. R., 3h. 4. 2m.

January 4	+38 26 36.61
29	35.88

ANONYMOUS, A. R., 3h. 4. 6m.

January 29	+38 26 18.71

WEISSE III, 62, A. R., 3h. 5. 1m.

November 11	+ 8 3 53.53
18	54.73

B. Z., 530, 91, A. R., 3h. 7. 9m.

November 19	+23 50 42.32

RUMKER, 845, A. R., 3h. 13. 9m.

December 6	+24 14 45.40
16	46.42

WEISSE III, 233, A. R, 3h. 14. 0m.

November 13	+10 7 23.73
18	25.38

B. Z., 508, 94, A. R, 3h. 18. 5m.

January 4	+37 33 10.56
29	10.14

ANONYMOUS, A. R., 3h. 22. 9m.

	° ′ ″
January 4	+37 0 4.26

B. Z., 508, 101, A. R., 3h. 23. 0m.

January 29	+36 59 42.53

WEISSE III, 428, A. R., 3h. 24. 6m.

November 18	+ 7 5 18.35
19	17.86

B. Z, 396, 35, A. R., 3h. 34. 0m.

November 19	+26 7 21.19

B. Z, 396, 45, A. R., 3h. 39. 8m.

November 19	+26 9 13.61

B. Z., 402, 10, A. R., 3h. 41. 9m.

January 4	+34 40 14.70

B. Z., 402, 13, A. R., 3h. 42. 6m.

January 29	+34 10 46.48

B. Z., 397, A. R., 3h. 56. 8m.

December 16	+27 29 45.53
25	43.15

B. Z., 521, A. R., 4h. 7. 0m.

December 25	+23 43 21.96
27	22.46

B. A. C., 1307, A. R., 4h. 8. 7m.

November 18	+49 42 12.61
December 16	11.01
25	10.61

ANONYMOUS, A. R., 4h. 11. 0m.

December 27	+46 43 15.98

ANONYMOUS, A. R., 4h. 22. 0m.

November 19	+28 59 34.48

WEISSE IV, 727, A. R., 4h. 33. 7m.

December 16	+ 2 13 50.33

WEISSE IV, 732, A. R., 4h. 34. 0m.

December 25	+ 3 23 8.48
27	8.99

B. Z, 396, A. R, 4h. 43. 7m.

November 19	+26 32 28.02

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GROOMBRIDGE, 892, A. R., 4h. 45. 4m.

		° ′ ″
December	16	+52 38 13.66
	25	13.38

ANONYMOUS, A. R., 4h. 56. 0m.

December	16	+45 16 31.84
	25	29.39

ANONYMOUS, A. R., 4h. 57. 0m.

December	16	+45 3 49.54
	25	51.26

η TAURI, A. R., 5h. 11. 0m.

February	27	+21 56 52.76

ζ TAURI, A. R., 5h. 29. 4m.

February	25	+21 3 13.54
	27	11.84

129 TAURI, A. R, 5h. 38. 8m.

February	27	+15 45 51.37

136 TAURI, A. R., 5h. 44. 6m.

February	25	+27 34 30.98
	27	30.31

1 GEMINORUM, A. R, 5h. 55. 7m.

February	25	+23 16 1.37
	27	0.33
March	11	1.19

η GEMINORUM, A. R, 6h. 6. 5m.

March	11	+22 32 38.04

51 CEPHEI, A R., 6h. 33. 6m.

September	7 S. P.	+87 14 52.22
	10 S. P.	52.90

ω GEMINORUM, A. R., 6h. 54. 0m.

February	27	+24 24 41.06
March	22	40.23

ζ GEMINORUM, A. R, 6h. 55. 9m.

March	11	+20 46 19.16

τ GEMINORUM, A. R., 7h. 2. 3m.

February	27	+30 28 14.54
March	11	14.58
	22	13.94

δ GEMINORUM, A. R., 7h. 11. 9m.

February	27	+22 14 12.29
March	11	11.66
	22	11.74

ι GEMINORUM, A. R., 7h. 17. 1m.

		° ′ ″
February	27	+28 4 21.45

α² GEMINORUM, A. R., 7h. 25. 8m.

February	27	+32 11 29.95
March	22	29.31

λ CANCRI, A. R., 8h. 12. 3m.

March	22	+24 27 35.38

θ CANCRI, A. R., 8h. 23. 7m.

March	22	+18 33 53.64

ARG. Z, 187, 74, A. R, 8h. 42. 3m.

October	12 S. P.	+63 6 28.73
	14 S. P.	30.13

RADCLIFFE, 2396, A. R., 9h. 39. 4m.

October	14 S. P.	+66 14 31.64
	18 S. P.	31.92

ARG. Z, 176, 26, A. R., 9h. 48. 6m.

October	14 S. P.	+66 0 13.27
	18 S. P.	13.73

α URSÆ MAJORIS, A. R., 10h. 55. 0m.

September	6 S. P,	+62 30 20.79
October	2	24.31
	3 S. P.	21.89
	3	23.40
	18 S. P.	20.56
November	21 S. P.	18.84
	26 S. P.	19.68
December	5 S. P.	16.57

λ DRACONIS, A. R., 11h. 23. 0m.

December	6 S. P.	+70 6 10.74
	7 S. P.	9.49
	10 S. P.	9.78

B. A. C., 4070, A. R., 11h. 57. 7m.

September	24 S. P.	+86 21 49.47

4 DRACONIS, A. R., 12h. 5. 6m.

December	6 S. P.	+78 23 37.56
	18 S. P.	38.74

κ DRACONIS, A. R., 12h. 27. 5m.

December	6 S. P.	+70 33 36.29
	7 S. P.	36.21
	17 S. P.	33.90
	19 S. P.	35.17

B. A. C., 4281, A. R., 12h. 37. 4m.

September	24 S. P.	+84 24 44.37
	27 S. P.	44.52
	30 S. P.	44.09

32¹ CAMELOPARDALIS, A.R., 12h. 48. 1m

		° ′ ″
December	19 S. P.	+84 10 44.86

32² CAMELOPARDALIS, A.R, 12h. 48. 1m.

December	6 S. P.	+84 10 26.52
	19 S. P.	25.44

5 URSÆ MINORIS, A. R., 14h. 27. 9m.

December	4 S. P.	+76 19 5.12

β URSÆ MINORIS, A. R., 14h. 51. 1m.

November	11 S. P.	+74 43 37.83
	11	40.69
	12	40.72
	13 S. P.	38.18
	18 S. P.	38.00
	18	40.85
	21	40.97
December	4 S. P.	37.34
	5	41.05
	9 S. P.	39.05

γ² URSÆ MINORIS, A. R., 15h. 21. 0m.

December	9 S. P.	+72 19 55.38
	13 S. P.	53.44

ζ URSÆ MINORIS, A. R., 15h. 49. 1m.

November	18 S. P.	+78 13 23.25
December	9 S. P.	22.95
	16 S. P.	21.42

GROOMBRIDGE, 2320, A. R., 16h. 6. 0m.

December	9 S. P.	+68 10 44.54

μ¹ SAGITTARII, A. R., 18h. 5. 4m.

September	7	−21 5 27.63
	10	26.79

δ URSÆ MINORIS, A. R., 18h. 20. 7m.

September	2	+86 36 9.04
	7	7.19
	10	7.71

α LYRÆ, A. R., 18h. 32. 2m.

September	2	+38 39 21.07
	7	18.69
	10	20.31
	25	19.06
	28	18.90
	30	18.55
October	1	18.89
	3	19.77
	4	19.89
	5	18.83
	8	19.60
	11	19.64
	12	20.45
	14	20.32
	23	20.47
	24	20.82
	28	19.92

α LYRÆ, A. R., 18h. 32. 2m.—Cont'd.

		° ′ ″
October	29	+38 39 19.96
	30	20.33
	31	20.25
November	7	20.36
	8	20.41
	12	19.72
	13	20.27
	18	20.39
	19	20.06
	23	19.89
December	4	19.84
	5	20.74
	6	19.85
	9	20.10
	10	21.14
	12	20.21
	13	20.07
	14	20.65
	16	20.20
	19	20.63
	21	21.16
	25	20.42
	27	20.61
	28	20.53
	29	20.14
	31	19.90

υ DRACONIS, A. R., 18h. 56. 1m.

September	12	+71 1 32.52

B. A. C., 6574, A. R., 19h. 6. 6m.

October	1	+21 19 16.97
	3	17.22
	4	17.24

B. A. C., 6594, A. R., 19h. 11. 4m.

October	4	−32 4 17.54
	5	18.33

B. A. C., 6609, A. R, 19h. 12. 8m.

October	5	−29 51 46.75

B. A. C., 6613, A. R, 19h. 13. 1m.

October	5	−29 46 53.17

WEISSE XIX, 315, A. R, 19h. 13. 7m.

October	14	−10 25 3.68

B. A. C., 6627, A. R., 19h. 15. 7m.

October	4	−31 3 54.80

B. A. C., 6665, A. R., 19h. 20. 8m.

October	4	−31 4 15.61

B. A. C., 6693, A. R., 19h. 26. 1m.

October	5	−31 54 26.29
	8	24.90

B. A. C., 6721, A. R., 19h. 30. 7m.

September	25	+47 51 40.61
	28	40.04
October	1	40.16

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ARGELANDER, 20055, A.R., 19h. 46. 1m.

		° ′ ″
September	2	—17 46 24.43
	6	21.29
October	1	23.09

B. A. C., 6829, A. R., 19h. 48. 0m.

October	3	—30 56 12.66
	8	10.72

B. A. C., 6831, A. R., 19h. 48. 3m.

October	23	—23 25 53.87

B. A. C., 6841, A. R., 19h. 50. 1m.

October	8	—30 54 31.83
	14	34.87

B. A. C., 6887, A. R., 19h. 56. 6m.

October	1	—29 28 5.77
	3	4.63

ARGELANDER, 20217, A. R., 19h. 57. 4m.

September	2	—16 45 57.66
	6	59.58
	28	57.96

B. A. C., 6899, A. R., 19h. 58. 7m.

October	14	—30 7 13.89
	23	14.31

ANONYMOUS, A. R., 20h. 5. 8m.

September	2	—15 50 19.73

ARGELANDER, 20337, A. R., 20h. 6. 7m.

September	2	—15 45 15.67
	6	16.18
	28	15.34

B. A. C., 6948, A. R., 20h. 7. 1m.

October	1	—30 25 43.91
	3	43.81

B. A. C., 6977, A. R., 20h. 10. 7m.

October	14	—30 3 25.70
	23	25.18

B. A. C., 7011, A. R., 20h. 16. 1m.

October	4	—29 31 25.87
	8	24.19

B. A. C., 7018, A. R., 20h. 16. 8m.

October	3	—29 6 50.67
	12	48.63

B. A. C., 7026, A. R., 20h. 17. 9m.

		° ′ ″
October	4	—29 31 31.80
	8	29.94

B. A. C., 7063, A. R., 20h. 23. 3m.

October	3	—15 31 13.22
	8	14.47

B. A. C., 7071, A. R., 20h. 24. 1m.

September	28	—29 3 55.11
October	1	55.38

ANONYMOUS, A. R., 20h. 26. 9m.

September	6	— 0 4 38.34

B. A. C., 7093, A. R., 20h. 27. 4m.

September	28	—27 15 11.23
October	1	12.49

1 AQUARII, A. R., 20h. 32. 2m.

September	6	— 0 0 11.67

WEISSE XX, 849, A. R., 20h. 33. 5m.

October	8	—10 8 11.36
	12	11.47

WEISSE XX, 924, A. R., 20h. 36. 4m.

September	6	— 0 1 51.24

B. A. C., 7170, A. R., 20h. 36. 8m.

October	23	—27 45 3.71

B. A. C., 7180, A. R., 20h. 38. 0m.

September	25	—24 13 48.02
October	3	47.63

ANONYMOUS, A. R., 20h. 38. 1m.

October	8	—10 37 35.54
	12	36.54

ANONYMOUS, A. R., 20h. 38. 3m.

October	8	—10 29 30.82
	12	32.19

B. A. C., 7214, A. R., 20h. 42. 2m.

October	23	—27 45 46.96

B. A. C., 7216, A. R., 20h. 42. 2m.

October	18	—25 29 46.05

WEISSE XX, 1269, A. R., 20h. 50. 0m.

September	6	— 0 4 7.66

B. A. C., 7285, A. R., 20h. 53. 2m.

		° ′ ″
September	25	+ 6 58 22.19

ANONYMOUS, A. R., 20h. 58. 6m.

October	18	—23 46 27.21
	23	26.38

B. A. C., 7327, A. R., 20h. 58. 9m.

October	18	—23 42 29.77
	23	29.24

A CAPRICORNI, A. R., 20h. 58. 9m.

October	28	—25 33 44.61

B. A. C., 7332, A. R., 20h. 59. 5m.

September	25	+52 43 47.86
	28	47.91
October	1	48.86

61¹ CYGNI, A. R., 21h. 0. 6m.

September	6	+38 3 47.90
	25	47.04
	28	47.67
October	1	47.47
	3	47.14
	23	47.68
November	8	48.22
	11	47.35
	15	48.34

61² CYGNI, A. R., 21h. 0. 6m.

September	6	+38 3 42.41
October	3	41.69
November	8	42.16
	11	41.76
	15	42.46

4 PISCIS AUSTRALIS, A. R., 21h. 9. 4m.

November	8	—32 45 17.37
	11	17.29

LACAILLE, 8764, A. R., 21h. 10. 6m

October	23	—41 38 17.84
	28	17.57

α CEPHEI, A. R., 21h. 15. 2m.

September	6	+61 59 35.77
October	1	38.09
November	11	36.44
	13	36.85
	15	36.83

θ² MICROSCOPII, A. R., 21h. 15. 5m.

October	23	—41 36 12.73
	28	13.03

B. A. C., 7436, A. R., 21h. 17. 7m.

October	3	—24 25 21.13
	18	21.10

LACAILLE, 8824, A. R., 21h. 21. 1m.

		° ′ ″
October	28	—44 41 7.06

B. A. C., 7467, A. R., 21h. 22. 3m.

September	25	—25 48 13.52
October	18	12.18

β CEPHEI, A. R., 21h. 26. 8m.

September	6	+69 56 48.05
November	11	46.80
	13	48.70
	15	48.66

B. A. C., 7508, A. R., 21h. 29. 2m.

September	25	+70 12 16.80
	28	16.66
October	1	14.86
	3	17.59

B. A. C., 7523, A. R., 21h. 31. 9m.

October	23	—25 4 38.00
November	8	37.54

B. A. C., 7549, A. R., 21h. 35. 4m.

September	25	—24 46 41.82
October	3	41.40

B. A. C., 7620, A. R., 21h. 46. 1m.

October	3	—10 58 6.25
	23	5.82

B. A. C., 7652, A. R., 21h. 51. 4m.

September	25	—23 32 22.75
October	23	22.85

11 PISCIS AUSTRALIS, A. R., 21h. 51. 5m.

October	3	—28 17 50.89
	23	51.46

WEISSE XXI, 1333, A. R., 21h. 58. 1m.

October	15	—10 34 28.19
	18	30.24

α GRUIS, A. R., 21h. 59. 4m.

September	24	—47 38 14.47
	25	9.43
October	3	17.03

WEISSE XXI, 1375, A. R., 21h. 59. 9m.

October	23	— 9 51 46.47
November	8	47.97

WEISSE XXI, 1384, A. R., 22h. 0. 3m.

November	11	—10 45 33.38
	13	35.20

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Weisse XXII, 13, A. R., 22h. 2. 1m.

	° ′ ″
October 23	— 9 29 5.58
November 8	6.06

Weisse XXII, 467, A. R., 22h. 22. 5m.

October 15	— 9 7 59.26
18	59.04

Weisse XXII, 641, A. R., 22h. 31. 0m.

October 15	— 8 37 24.63
18	23.87

Weisse XXII, 675, A. R., 22h. 32. 2m.

October 23	— 8 19 52.68
November 7	52.07

ζ Pegasi, A. R., 22h. 34. 5m.

September 20	+10 6 6.65

Weisse XXII, 761, A. R., 22h. 35. 9m.

November 8	— 7 56 49.44
12	48.99

Weisse XXII, 900, A. R., 22h. 45. 2m.

October 18	— 7 38 59.07
23	57.56

Weisse XXII, 962, A. R., 22h. 46. 4m.

November 8	— 6 51 5.99
13	6.72

Lalande, 44823, A. R., 22h. 48. 0m.

October 23	—20 53 3.21
28	0.95

Weisse XXII, 995, A. R., 22h. 48. 1m.

November 7	— 6 26 3.95

α Piscis Australis, A. R., 22h. 49. 9m.

September 6	—30 21 45.79
24	44.97
October 3	47.20
15	47.17
18	47.79

Lalande, 44877, A. R., 22h. 50. 1m.

October 23	—21 1 20.44
28	18.10

Weisse XXII, 1049, A. R., 22h. 50. 9m.

October 24	— 6 25 59.77
November 7	61.45
8	60.80

Weisse XXII, 1057, A. R., 22h. 51. 3m.

	° ′ ″
November 7	— 6 25 17.33

Weisse XXII, 1082, A. R., 22h. 52. 2m.

November 12	+10 58 55.43
21	55.41

Anonymous, A. R., 22h. 52. 4m.

December 11	+11 27 0.88

Weisse XXII, 1108, A. R., 22h. 53. 3m.

December 7	+11 29 25.10

B. A. C., 8016, A. R., 22h. 54. 1m.

October 14	— 7 48 40.54
15	41.55

Anonymous, A. R., 22h. 54. 4m.

October 23	—20 57 37.76
28	38.59

Weisse XXII, 1159, A. R., 22h. 55. 2m.

November 8	+11 47 6.77
13	8.72

Weisse XXII, 1203, A. R., 22h. 57. 1m.

October 14	— 7 26 29.23
15	30.01

Weisse XXII, 1272, A. R., 23h. 0. 7m.

October 23	— 5 31 57.60
31	59.40

Weisse XXII, 1283, A. R., 23h. 1. 4m.

October 23	— 5 32 8.75
31	11.65

Weisse XXIII, 48, A. R., 23h. 4. 1m.

November 4	+ 4 14 43.96
8	42.47

Weisse XXIII, 88, A. R., 23h. 6. 3m.

October 14	— 7 5 7.80
15	8.80

Weisse XXIII, 111, A. R., 23h. 6. 9m.

November 4	+ 4 14 11.26
8	11.71

φ Aquarii, A. R., 23h. 7. 1m.

September 20	— 6 48 10.52
24	10.83
October 14	9.65
15	10.07

Lalande, 45648, A. R., 23h. 12. 1m.

	° ′ ″
November 18	—19 19 11.60
December 6	12.21

b Piscium, A. R., 23h. 13. 2m.

October 24	+ 4 37 5.01
November 12	6.45

Lalande, 45804, A. R., 23h. 16. 5m.

November 18	—18 33 25.06
December 6	26.78

Weisse XXIII, 340, A. R., 23h. 17. 2m.

October 23	+ 5 25 6.33
28	8.25

Weisse XXIII, 342, A. R., 23h. 17. 4m.

October 31	+13 42 42.78
November 16	42.82

Lalande, 45838, A. R., 23h. 17. 9m.

December 11	—18 51 49.26
12	48.86

Weisse XXIII, 359, A. R., 23h. 18. 2m.

November 4	+ 5 16 22.07
8	20.91

θ Piscium, A. R., 23h. 20. 9m.

November 8	+ 5 36 39.01
11	39.34

Santini, 1633, A. R., 23h. 21. 2m.

October 28	+ 5 18 21.87
November 4	20.50

B. A. C., 8184, A. R., 23h. 22. 3m.

October 24	— 5 17 41.57
November 5	44.33
7	42.92

Santini, 1635, A. R., 23h. 22. 4m.

October 28	+ 5 19 56.89

Weisse XXIII, 458, A. R., 23h. 23. 2m.

November 8	+ 5 39 17.09
11	18.03

Weisse XXIII, 528, A. R., 23h. 26. 5m.

November 18	+15 11 43.63
December 11	42.69

Weisse XXIII, 613, A. R., 23h. 30. 1m.

	° ′ ″
October 14	— 1 49 25.62

Anonymous, A. R., 23h. 30. 2m.

October 23	— 1 54 38.79

Weisse XXIII, 683, A. R., 23h. 33. 6m.

December 11	+ 7 6 38.25
12	38.03

γ Cephei, A. R., 23h. 33. 6m.

September 20	+76 51 6.11
24	4.98
November 11	3.78
13	5.06
18	4.61
December 6	4.80

Weisse XXIII, 705, A. R., 23h. 34. 6m.

December 13	+ 7 25 40.98
18	43.51

Weisse XXIII, 710, A. R., 23h. 34. 8m.

November 4	+ 6 28 35.02
8	34.70
16	34.65
21	34.16
26	33.79

Weisse XXIII, 730, A. R., 23h. 36. 1m.

October 31	— 1 29 1.97
November 7	1.70

Weisse XXIII, 749, A. R., 23h. 37. 1m.

December 13	+ 8 10 1.33
18	0.80

B. A. C., 8257, A. R., 23h. 37. 7m.

November 16	+ 6 24 57.28
21	58.46
December 5	57.70

Weisse XXIII, 767, A. R., 23h. 37. 8m.

November 7	— 1 26 12.05

Anonymous, A. R., 23h. 38. 0m.

October 31	— 1 28 19.18

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WEISSE XXIII, 783, A.R., 23h. 38. 8m.

		° ′ ″
October	14	— 0 30 47.35
	15	47.48

ANONYMOUS, A. R., 23h. 40. 0m.

November	26	+ 6 28 27.48

WEISSE XXIII, 817, A.R., 23h. 40. 5m.

October	28	— 1 32 17.33
	31	17.08
November	5	17.91
	7	16.28

WEISSE XXIII, 828-9, A R., 23h. 41. 0m

December	11	+ 9 22 13.65
	13	13.12

WEISSE XXIII, 830, A.R., 23h. 41. 0m.

October	28	— 1 33 4.98

B. A. C., 8272, R. A., 23h. 41. 0m.

		° ′ ″
October	24	+ 7 28 10.12
December	5	10.11

WEISSE XXIII, 831, A.R., 23h. 41. 1m.

November	21	+ 6 23 13.96
	26	10.80

WEISSE XXIII, 870, A.R., 23h. 43. 0m.

December	17	+ 6 16 10.89

ANONYMOUS, A. R., 23h. 43. 4m.

December	13	+ 7 20 14.49
	16	12.53

WEISSE XXIII, 916, A.R., 23h. 45. 5m.

October	28	— 1 35 9.76
November	11	9.98

82 PEGASI, A. R., 23h. 45. 5m.

December	7	+10 10 9.66
	10	10.03

WEISSE XXIII, 932, A. R., 23h. 46. 0m.

		° ′ ″
December	13	+ 5 55 15.78
	18	16.19

ANONYMOUS, A. R, 23h. 47. 7m.

October	15	— 1 3 33.14
	23	33.08

SANTINI, 1664, A. R., 23h. 48. 5m.

November	4	+ 7 26 40.79
	8	42.39

WEISSE XXIII, 1030, A.R., 23h. 50. 6m.

December	11	+10 41 45.02

WEISSE XXIII, 1039, A.R., 23h. 50. 9m.

October	31	— 0 54 26.90
November	21	23.52

ANONYMOUS, A. R., 23h. 51. 0m.

December	12	+10 43 41.15

ω PISCIUM, A. R., 23h. 52. 1m.

		° ′ ″
October	24	+ 6 5 19.20
November	16	18.85

c^1 PISCIUM, A. R., 23h. 55. 2m.

October	29	+ 8 10 38.57
November	5	39.60

WEISSE XXIII, 1146, A.R., 23h. 55. 8m.

November	11	— 1 40 17.66
December	11	19.44
	13	13.81

WEISSE XXIII, 1201, A.R., 23h. 58. 8m.

October	23	+12 5 43.59
	28	43.92

WEISSE XXIII, 1212, A.R., 23h. 59. 4m.

October	23	+12 3 8.82
	28	8.71

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RIGHT ASCENSIONS, DECLINATIONS, AND SEMI-DIAMETERS,

OF THE

SUN, MOON, AND PLANETS,

OBSERVED WITH THE

WEST TRANSIT INSTRUMENT AND THE MURAL CIRCLE,

IN

1861.

Hosted by Google

SUN.

Date.	Mean time.	Right Ascension of centre.	C — O	Sidereal time of transit of semi-diameter.	C — O	Declination of centre.	C — O	Vertical semi-diameter.	C — O	Limb.
1861.	m. s	h. m. s.	s.	m. s.	s.	° ′ ″	″	′ ″	″	
Sept. 4	— 1 13.7	- - - -	- -	- - -	- -	+ 7 1 43.99	— 0.5	15 51.83	+ 2.75	
6	1 53.2	- - - -	- -	- - -	- -	6 17 4.64	1.6	55.84	— 0.78	
7	2 13.3	- - - -	- -	- - -	- -	5 54 37.24	— 3.9	53.16	+ 2.15	
9	2 54.2	- - - -	- -	- - -	- -	5 9 16.24	+ 0.5	56.09	— 0.27	
10	3 14.8	- - - -	- -	- - -	- -	4 46 32.76	— 2.3	52.08	+ 4.00	
11	3 35.6	- - - -	- -	- - -	- -	4 23 41.78	2.2	56.42	— 0.08	
12	3 56.5	- - - -	- -	- - -	- -	4 0 44.27	— 0.1	- -	- -	N.
20	6 45.6	- - - -	- -	- - -	- -	+ 0 55 17.03	+ 0.6	- -	- -	S.
24	8 9.1	- - - -	- -	- - -	- -	— 0 38 16.34	+ 0.8	- -	- -	N.
28	9 29.8	- - - -	- -	- - -	- -	2 11 53.57	— 0.6	- -	- -	N.
Oct. 3	11 4.9	- - - -	- -	- - -	- -	4 8 30.21	0.3	16 1.35	+ 0.88	
4	11 23.0	- - - -	- -	- - -	- -	4 31 40.47	— 1.9	1.74	+ 0.77	
5	11 40.7	- - - -	- -	- - -	- -	4 54 52.50	+ 1.6	4.27	— 1.48	
7	12 15.0	- - - -	- -	- - -	- -	5 40 57.41	+ 0.8	2.72	+ 0.63	
11	13 18.5	- - - -	- -	- - -	- -	7 12 9.86	— 1.3	- -	- -	S.
12	13 33.2	13 11 25.69	+ 0.03	1 5.00	+ 0.05	7 34 45.69	— 0.1	- -	- -	N.
14	14 1.1	- - - -	- -	- - -	- -	8 19 35.91	+ 0.4	- -	- -	N.
15	14 14.3	13 22 34.09	+ 0.05	- - -	- -	8 41 48.35	— 1.6	6.72	— 1.12	
23	15 38.1	- - - -	- -	- - -	- -	11 34 48.19	+ 0.8	- -	- -	S.
24	15 45.5	13 56 31.81	— 0.16	1 6.05	0.08	11 55 40.67	— 0.9	- -	- -	N.
25	15 52.3	- - - -	- -	1 6.06	0.17	12 16 25.67	+ 0.7	6.03	+ 2.23	
28	16 8.0	14 11 55.34	+ 0.05	1 6.56	0.00	13 17 28.25	2.0			
29	16 11.7	- - - -	- -	- - -	- -	13 37 23.16	1.0	9.86	— 0.59	N.
30	16 14.6	14 19 41.80	0.11	1 6.77	+ 0.01					
31	16 16.7	14 23 36.27	0.10	1 6.91	— 0.02	14 16 37.88	+ 2.9	- -	- -	S.
Nov. 1	16 17.9	- - - -	- -	- - -	- -	14 35 51.48	+ 0.5	8.48	+ 1.53	
7	16 8.5	- - - -	- -	- - -	- -	16 26 13.90	— 0.1	11.72	— 0.26	
8	16 4.0	- - - -	- -	- - -	- -	16 43 42.77	+ 0.9	- -	- -	N.
12	15 38.0	15 11 33.62	+ 0.03	1 8.23	+ 0.09	17 50 40.47	2.1	12.00	+ 0.62	
13	15 29.4	- - - -	- -	- - -	- -	18 6 37.58	0.7	11.34	+ 1.50	
16	14 58.6	15 27 59.40	— 1.09	1 8.75	0.04					
19	14 20.3	15 40 27.32	0.00	1 9.13	0.01	19 35 36.91	+ 2.2	15.30	— 1.23	
21	13 50.7	15 48 50.07	+ 0.05	1 9.31	0.04	20 2 24.77	— 3.2	- -	- -	N.
22	13 34.6	15 53 2.77	— 0.02	1 9.36	0.10	20 15 21.66	0.0	15.14	0.51	
23	13 17.8	- - - -	- -	- - -	- -	20 27 53.19	+ 0.1	- -	- -	S.
26	12 22.6	- - - -	- -	- - -	- -	21 3 6.56	— 3.1	- -	- -	S.
30	10 58.6	16 27 11.80	— 0.16	1 10.16	+ 0.12	21 44 38.80	+ 0.8	- -	- -	N.
Dec. 4	9 24.1	16 44 32.45	+ 0.22	1 10.75	— 0.16	22 19 27.43	+ 0.9	17.85	1.36	
5	8 59.0	- - - -	- -	- - -	- -	22 27 1.15	— 3.0	- -	- -	N.
6	8 33.4	- - - -	- -	- - -	- -	22 34 15.39	+ 0.1	16.89	— 0.13	
9	7 13.8	17 6 26.07	+ 0.07	1 10.90	+ 0.02	22 53 8.66	— 0.3	16.74	+ 0.40	
10	6 46.4	17 10 50.22	— 0.05	1 10.92	0.06	22 58 32.61	0.9	- -	- -	N.
11	6 18.7	17 15 14.18	+ 0.40							
12	5 50.6	17 19 39.44	— 0.12	1 11.04	0.04	23 7 57.03	1.7	- -	- -	N.
13	5 22.2	17 24 4.22	+ 0.17	1 11.07	+ 0.05	23 12 0.21	0.1	16.35	1.21	
14	4 53.5	17 28 29.71	+ 0.03	1 11.24	— 0.08	23 15 31.97	2.2	17.56	0.10	
16	3 55.5	- - - -	- -	- - -	- -	23 21 18.01	0.3	17.60	+ 0.22	
17	3 25.9	17 41 47.42	— 0.19	1 11.20	+ 0.04	23 23 26.86	— 1.4	19.31	— 1.42	
19	2 26.7	17 50 39.78	+ 0.02	- - -	- -	23 26 25.92	+ 1.9	- -	- -	N.
21	1 27.0	17 59 32.92	— 0.11	1 11.31	— 0.01					
22	0 57.0	- - - -	- -	- - -	- -	23 27 17.29	+ 2.1	- -	- -	N.
23	— 0 27.1									
25	+ 0 32.8	- - - -	- -	- - -	- -	23 23 48.17	— 3.4	18.26	+ 0.02	
27	1 32.3	- - - -	- -	- - -	- -	23 19 14.95	+ 0.5	16.72	+ 1.60	
30	+ 3 0.3	18 39 29.76	+ 0.18	1 11.06	+ 0.09	—23 8 48.44	+ 0.7	16 18.61	— 0.26	

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MOON.

Date.	Mean time.	Limb.	Right Ascension of Moon's Limb.	C — O
1861.	m. s.		h. m. s.	s.
Jan. 19	6 20.7	I	2 17 59.48	+ 0.26
20	7 8.3	I.	3 9 39.38	0.31
21	7 59.3	I.	4 4 49.58	0.46
22	8 53.6	I.	5 3 13.08	+ 0.42
30	16 4.5	II.	12 46 51.68	— 0.42
Feb. 20	8 30.6	I.	6 34 33.73	— 0.13
21	9 26.6	I.	7 34 32.57	0.10
22	10 21.7	I.	8 33 42.86	— 0.05
24	12 8.2	I.	10 28 12.32	
24	12 10.4	II.	10 30 30.58	+ 0.04
25	13 2.5	II.	11 26 39.41	— 0.07
28	15 44.4	II.	14 21 54.30	— 0.53
March 1	16 42.0	II.	15 22 36.69	— 0.37
16	3 43.6	I.	3 21 14.26	— 0.04
19	6 18.8	I.	6 8 45.98	+ 0.35
22	8 59.5	I.	9 1 47.58	— 0.09
25	11 26.2	I.	11 50 47.71	0.04
27	13 29.4	II.	13 52 6.04	0.32
29	15 29.2	II.	16 0 7.37	— 0.64
April 17	5 57.9	I.	7 42 6.56	+ 0.39
18	6 49.3	I.	8 37 34.76	0.07
19	7 39.9	I.	9 32 10.56	+ 0.06
20	8 30.0	I.	10 26 26.51	— 0.23
21	9 20.8	I.	11 21 15.43	0.19
22	10 13.1	I.	12 17 42.01	0.10
24	12 6.3	I.	14 19 10.52	
24	12 8.7	II.	14 21 38.16	0.10
25	13 10.3	II.	15 27 6.36	0.32
26	14 13.2	II.	16 34 9.12	0.52
28	15 15.3	II.	18 43 37.78	0.50
29	15 14.4	II.	19 42 22.61	— 0.10
May 22	10 47.4	I.	14 50 22.78	— 0.01
23	11 49.5	I.	15 56 40.48	+ 0.15
23	11 52.1	II.	15 59 11.92	
25	13 57.6	II.	18 12 58.15	— 0.32
29	17 23.7	II.	21 55 16.32	0.00
June 15	5 56.5	I.	11 33 18.00	0.02
16	6 45.8	I.	12 26 49.22	— 0.21
18	8 33.6	I.	14 22 33.11	+ 0.22
19	9 32.9	I.	15 25 49.52	0.04
20	10 34.4	I.	16 31 46.68	+ 0.04
21	11 37.0	I.	17 38 17.38	— 0.06
22	12 40.7	II.	18 45 15.47	0.05
24	14 28.0	II.	20 41 49.72	0.06
26	16 0.2	II.	22 22 0.03	— 0.09
27	16 42.3	II.	23 8 12.43	+ 0.08
July 17	8 22.8	I.	16 6 11.27	+ 0.19
20	11 21.1	I.	19 16 50.26	— 0.24
23	13 52.8	II.	22 0 43.74	0.20
24	14 36.2	II.	22 48 18.06	0.22
25	15 18.2	II.	23 34 18.79	— 0.07
26	15 59.7	II.	0 19 48.49	0.00
Aug. 15	8 15.7	I.	17 53 23.90	+ 0.23
20	12 30.8	II.	22 28 55.91	0.09
21	13 13.4	II.	23 15 33.73	0.15
23	14 37.0	II.	0 47 17.40	0.22
24	15 19.8	II.	1 34 6.81	0.19
25	16 4.2	II.	2 22 32.68	+ 0.44
Sept. 12	7 8.5	I.	18 36 22.18	— 0.05
13	8 2.8	I.	19 34 51.89	— 0.06
14	8 53.6	I.	20 29 40.88	+ 0.03
17	11 8.3	I.	22 56 32.85	0.36
18	11 50.1	I.	23 42 23.67	
18	11 52.1	II.	23 44 27.14	0.43
19	12 33.8	II.	0 30 12.87	+ 0.51

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MOON.

Date.	Mean time.	Limb.	Right Ascension of Moon's Limb.	C — O	Mean time.	Declination of centre.	C — O	Limb.
1861.	h. m.		h. m. s.	s.	h. m.	° ′ ″	″	
Sept. 20	13 16.2	II.	- - - -	- -	13 15.2	+ 13 16 59.70	— 0.4	N.
22	14 45.6	II.	2 54 10.84	+ 0.51	14 44.5	+ 20 44 21.97	+ 1.6	N.
23	15 33.2	II.	3 45 50.89	0.30				
24	16 22.6	II.	4 39 22.59	0.16				
25	17 13.4	II.	5 34 17.06	+ 0.15				
Oct. 11	6 51.0	I.	20 13 10.78	— 0.36	6 52.1	— 17 47 56.84	0.7	S.
12	7 39.2	I.	21 5 29.88	0.13	7 40.3	13 25 6.16	1.0	S.
13	8 24.2	I.	21 54 38.01	— 0.16				
14	9 7.2	I.	22 41 33.14	+ 0.05	9 8.2	— 3 21 17.63	2.2	S.
15	9 48.8	I.	23 27 15.56	0.28	9 49.8	+ 1 51 54.62	+ 0.1	S.
18	11 55.3	I.	1 45 59.11					
18	11 57.5	II.	1 48 5.67	0.70	11 56.4	+ 15 58 56.28	— 0.5	N.
23	15 58.8	II.	6 10 50.62	0.14				
24	16 49.2	II.	7 4 20.52	0.05				
27	19 16.4	II.	9 43 41.06	+ 0.25				
Nov. 7	4 44.4	I.	19 52 43.07	+ 0.46	4 45.6	— 18 58 43.83	+ 2.8	S.
8	5 35.3	I.	20 47 39.44	0.12	5 36.4	— 14 45 27.61	5.2	S.
11	7 48.0	I.	23 12 33.25	0 12	7 49.0	+ 0 22 43.89	1.1	S.
12	8 29.3	I.	23 57 54.96	0.07	8 30.3	5 28 36.68	+ 1.6	S.
13	9 10.9	I.	0 43 31.62	+ 0.02	9 11.9	10 18 24.40	— 0.4	S.
16	11 24.2	I.	3 9 3.78	— 0.02	11 25.3	21 28 1.01	1.7	S.
18	13 4.7	II.	4 57 44.35	+ 0.39	13 3.6	+ 24 22 0.18	2.2	N.
21	15 35.3	II.	7 40 33.18	0.05				
23	17 10.8	II.	9 24 15.95	+ 0.23				
25	18 44.9	II.	11 6 30.82	— 0.19				
Dec. 4	2 30.0	I.	19 24 22.41	— 0.15				
5	3 25.0	I.	20 23 23.89	— 0.02	3 26.1	— 16 35 47.16	— 0.3	S.
6	4 15.1	I.	21 17 37.87	+ 0.23	4 16.2	11 50 26.37	+ 4.4	S.
7	5 1.3	I.	22 7 58.57	0.20	5 2.4	— 6 40 18.93	1.6	S.
8	5 45.0	I.	22 55 36.77	0.14				
9	6 27.0	I.	23 41 44.67	0.13	6 28.0	+ 3 50 2.61	4.7	S.
10	7 8.7	I.	0 27 29.18	0.21	7 9.7	8 47 35.58	0.0	S.
11	7 51.0	I.	1 13 49.42	0.24	7 52.0	13 20 35.71	3.2	S.
12	8 34.6	I.	2 1 33.85	0.12				
13	9 20.3	I.	2 51 15.46	0.14	9 21.4	20 35 10.23	0.4	S.
14	10 8.0	I.	3 43 6.52	0.13				
15	10 57.7	I.	4 36 52.03	0.03				
16	11 48.6	I.	5 31 49.75	0.19	11 49.7	+ 24 16 22.39	+ 1.3	S.
16	11 50.8	II.	5 34 5.78					
17	12 41.9	II.	6 29 17.37	0.30				
18	13 32.4	II.	7 23 45.50	0.35				
19	14 21.4	II.	8 16 54.33	0.18				
20	15 9.1	II.	9 8 36.82	+ 0.12				
21	15 55.7	II.	9 59 15.20	— 0.13				
23	17 28.8	II.	11 40 32.63	0.42				
24	18 17.5	II.	12 33 21.28	— 0.49				

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MERCURY.

Date.	Mean time.	Limb.	Right Ascension.	C — O	Declination of centre.	C — O	Vertical semi-diam.	C — O
1861.	h. m.		h. m. s.	s.	° ′ ″	″	″	″
Sept. 25	0 48.4	- -	- - - -	- -	— 7 24 37.67	— 1.9		
28	0 53.2	- -	- - - -	- -	9 28 51.03	+ 0.5		
Oct. 3	1 0.5	- -	- - - -	- -	12 42 44.59	— 0.3		
4	1 1.9	- -	- - - -	- -	13 19 22.07	+ 0.6		
5	1 3.2	- -	- - - -	- -	13 55 12.38	+ 1.2		
11	1 10.4	- -	- - - -	- -	17 12 5.12	— 1.2	2.42	+ 0.44
12	1 11.4	- -	- - - -	- -	17 41 37.12	+ 0.2		
14	1 13.2	- -	14 46 19.44	— 0.03	18 37 25.08	— 2.3	2.95	0.01
15	1 14.0	- -	- - - -	- -	19 3 41.85	0.0	2.43	+ 0.58
24	1 15.7	- -	15 28 13.52	— 0.11	21 58 57.70	0.4		
28	1 10.6	- -	- - - -	- -	22 31 6.46	3.2		
29	1 8.4	- -	- - - -	- -	22 33 19 94	— 0.8		
Nov. 18	22 49.6	- -	14 44 11.63	— 0.25	13 39 32.36	+ 1.0		
Dec. 5	22 34.0	- -	- - - -	- -	17 36 38.24	+ 0.2		
8	22 39.0	- -	- - - -	- -	18 53 26.80	— 1.1		
12	22 46.9	- -	- - - -	- -	20 29 48.33	— 2.9		
15	22 53.6	- -	16 34 44.66	— 0.17	21 34 46.59	+ 1.4		
24	23 16.8	- -	- - - -	- -	23 56 35.47	— 5.9		
29	23 31.2	- -	18 7 33.65	— 0.30	— 24 34 31.81	— 1.7		

VENUS.

Date.	Mean time.	Limb.	Right Ascension.	C — O	Declination of centre.	C — O	Vertical semi-diam.	C — O
1861.								
Sept. 25	2 4.7	- -	- - - -	- -	— 14 49 17.97	+ 2.3	7.19	— 0.20
28	2 6.8	- -	- - - -	- -	16 6 58.03	0.9	6.48	+ 0.52
30	2 8.4	- -	- - - -	- -	16 56 54.55	0.3	7.36	— 0.28
Oct. 3	2 10.8	- -	- - - -	- -	18 8 49.85	0.6	7.06	— 0.13
5	2 12.4	- -	- - - -	- -	18 54 38.49	2.1	6.72	+ 0.55
11	2 17.9	- -	- - - -	- -	21 0 33.74	1.3	7.80	— 0.27
12	2 18.9	- -	15 44 16.88	— 0.03	21 19 46.10	2.0	6.80	+ 0.77
14	2 20.9	- -	15 54 10.21	+ 0.06	21 56 31.43	2.0	7.85	— 0.20
15	2 21.9	- -	15 59 8.47	0.02	22 14 4.29	2.5	7.25	+ 0.45
17	2 24.1							
18	2 25.1	- -	16 14 8.73	+ 0.06				
23	2 30.5	- -	16 39 26.52	— 0.29	24 12 51.37	2.3	7.35	+ 0.74
24	2 31.6	- -	16 44 32.25	0.25	24 24 50.83	+ 0.4	8.80	— 0.66
28	2 36.4	- -	17 4 1.11	— 0.16	25 6 15.66	— 0.8	8.14	+ 0.23
29	2 37.6	- -	- - - -	- -	25 14 59.80	+ 3.1	8.04	+ 0.38
31	2 40.0	- -	- - - -	- -	25 30 12.09	— 0.2	8.99	— 0.44
Nov. 7	2 48.4	- -	- - - -	- -	26 1 24.55	+ 0.2	9.02	— 0.03
8	2 49.6	- -	18 1 42.45	— 0.23	26 3 1.91	1.5	8.71	+ 0.35
12	2 54.4	- -	18 22 13.05	0.20	26 2 19.71	+ 0.7	8.86	0.48
13	2 55.5	- -	18 27 19.19	0.30	26 0 21.72	— 0.5	8.02	1.41
18	3 1.1	- -	18 52 35.49	0.13	25 40 7.24	+ 0.4	9.03	0.80
19	3 2.2	- -	18 57 35.65	0.22	25 34 0.97	1.5	9.59	0.31
21	3 4.2	- -	19 7 31.76	0.02	25 19 44.52	+ 0.2	8.16	+ 1.90
23	3 6.2	- -	19 17 22.38	0.01	25 2 49.32	— 1.4	12.19	— 1.94
30	3 12.1	- -	19 50 57.79	— 0.09				
Dec. 4	3 14.9	- -	20 9 27.19	+ 0.08				
5	3 15.5	- -	20 13 59.49	— 0.18	22 29 54.88	0.7	12.08	0.61
6	3 16.0	- -	20 18 29.03	+ 0.01	— 22 13 33.21	— 0.2	11.90	— 0.31
9	3 17.5	- -	20 31 43.96	— 0.05				
10	3 17.8	- -	20 36 4.03	— 0.05				
12	3 18.5	- -	20 44 36.37	+ 0.02				
13	3 18.8	- -	20 48 48.48	0.18				
16	3 19.3	- -	21 1 9.03	+ 0.07				
17	3 19.3	- -	21 5 10.37	— 0.08				
19	3 19.4	- -	21 13 4.00	+ 0.06				
21	3 19.1	- -	21 20 45.83	0.17				
25	3 18.1	- -	21 35 32.90	0.10				
28	3 17.3	- -	21 46 4.11	0.22				
30	3 15.8	- -	21 52 47.98	+ 0.31				

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Date.	Mean time	Limb.	Right Ascension	C — O	Sid. time of transit of semi-d.	C — O	Declination of centre.	C — O	Vertical semi-diam.	C — O
JUNO.										
1861.	h. m.		h. m. s.	s.	s.	s.	° ′ ″	s.	″	″
Dec. 4	- - -	- -	4 12 13.88	— 1.91						
9	- - -	- -	4 9 41.50	— 2.30						
JUPITER.										
1861.										
Nov. 25	- - -	- -	11 40 28.80	— 0.38						
Dec. 23	- - -	- -	11 50 40.34	— 0.32	1.25	+ 0.02				
SATURN.										
1861.										
Dec. 23	- - -	- -	11 36 10.69	+ 0.69	0.57	0.00				
URANUS.										
1861.										
Nov. 18	13 1.9	- -	4 54 59.84	— 2.52						
Dec. 6	11 48.0	- -	4 51 46.87	— 2.45						
9	11 35.7	- -	4 51 14.06	2.41						
18	10 58.7	- -	4 49 37.36	2.45						
25	10 29.9	- -	4 48 25.07	2.11	- -	- -	+22 27 5.96	+ 9.4		
27	10 21.7	- -	4 48 5.52	2.34	- -	- -	+22 26 46.74	— 4.0		
30	10 9.4	- -	4 47 36.45	— 2.18						
NEPTUNE.										
1861.										
Oct. 14	10 26.4	- -	0 0 53.58	+ 1.86	- -	- -	— 1 26 26.22	+ 8.1		
15	10 22.4	- -	- - - -	- -	- -	- -	1 27 2.61	9.3		
18	10 10.3	- -	0 0 31.88	1.68	- -	- -	1 28 46.96	10.6		
28	- - -	- -	23 59 41.68	+ 1.76						
Nov. 8	- - -	- -	23 58 55.74	+ 1.68						
11	8 34.1	- -	23 58 45.20	1.64	- -	- -	1 39 40.65	7.2		
18	8 6.3	- -	23 58 24.23	+ 1.59	- -	- -	1 41 43.57	8.3		
Dec. 6	6 54.9	- -	23 57 55.97	+ 1.60	- -	- -	1 44 3.65	8.7		
9	6 43.2	- -	23 57 55.17	1.57						
10	6 39.2	- -	23 57 55.19	1.52	- -	- -	1 43 59.19	9.3		
11	6 35.3	- -	23 57 55.29	1.52	- -	- -	1 43 55.86	9.3		
12	6 31.4	- -	23 57 55.41	1.63						
13	6 27.4	- -	23 57 55.80	1.60	- -	- -	1 43 39.25	1.8		
16	6 15.7	- -	23 57 57.65	1.59	- -	- -	1 43 26.60	9.2		
17	6 11.8	- -	- - - -	- -	- -	- -	1 43 18.37	9.3		
18	6 7.9	- -	23 57 59.45	1.64	- -	- -	1 43 8.48	8.5		
19	6 4.0	- -	23 58 0.61	1.60	- -	- -	1 42 58.53	8.4		
21	5 56.1	- -	- - - -	- -	- -	- -	1 42 35.37	7.7		
25	5 40.5	- -	23 58 10.00	1.57						
27	5 32.7	- -	- - - -	- -	- -	- -	1 41 9.13	7.9		
30	5 21.0	- -	23 58 21.14	+ 1.68	- -	- -	— 1 40 14.96	+ 8.1		
COMET 1861, II.										
1861. July 3, S. P.	15 21 46.7	- -	22 11 7.19	- -	- -	- -	+66 34 15.73			

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RIGHT ASCENSIONS AND DECLINATIONS

OF

ASTEROIDS AND COMETS,

OBSERVED WITH THE EQUATORIAL,

1861.

Hosted by Google

DATE.		M. T.—WASH.	COMPARISON STAR.	α	δ	No. of comp.
1861.		h. m. s.		h. m. s.	° ′ ″	
			ECHO—(TITANIA.)			
January	4	7 59 42.8	Weisse XXIII, 809	23 41 11.56	— 2 29 39.04	3
	5	7 24 48.4	Weisse XXIII, 809	23 42 35.73	— 2 21 34.09	5
			MELPOMENE.			
February	12	9 2 44.0	Weisse VIII, 1146	8 44 13.08	+ 13 44 13.47	20
	13	9 9 38.5	Weisse VIII, 1146	8 43 18.71	13 52 49.74	20
	15	9 27 49.8	Weisse VIII, 936	8 41 33.24	14 9 39.00	6
	20	9 29 32.4	2640, Rumker	8 37 33.53	+ 14 49 47.43	10
			PROSERPINE.			
February	21	8 40 24.3	B. Z, 278, 116	8 54 7.25	+ 23 12 50.91	3
	27	8 38 7.9	B. Z, 344, 66	8 49 36.00	23 12 14.54	5
	28	8 41 22.2	B. Z, 344, 66	8 48 55.56	+ 23 24 30.53	10
			COMET I, 1861.			
April	10	10 10 21.3	A. Z., 117, 39	17 7 55.48	+ 59 26 16.65	9
	11	8 38 8.8	A. Z, 125, 35	17 2 31.29	60 8 13.75	5
	14	11 22 54.1	A. Z., 125, 9	16 39 10.65	62 35 49.72	10
	17	8 55 21.4	A. Z, 123, 2	16 6 55.52	64 56 54.70	10
	19	8 40 20.0	A. Z, 116, 120	15 36 13.96	66 25 45.82	1
	19	- - - -	A. Z, 116, 121	15 36 14.16	66 25 46.52	1
	19	8 59 33.6	Madrass, 1029	15 35 59.36	66 26 21.92	5
	20	9 0 6.1	A. Z, 116, 71	15 17 10.69	67 4 19.42	6
	25	10 48 59.5	4365, B. A. C.	13 6 32.32	67 10 32.08	2
	26	8 42 39.2	2936, Radcliffe	12 39 50.43	66 17 27.36	5
	27	8 34 42.7	2860, Radcliffe	12 11 16.80	64 54 37.49	5
	28	8 9 2.0	A. Z., 186, 59	11 44 40.31	63 7 30.25	5
	29	8 30 42.5	3497, Rumker	11 19 21.77	60 50 46.27	4
	30	9 50 49.2	2582, Radcliffe	10 55 42.34	58 2 35.63	4
May	2	8 52 23.3	2472, Radcliffe	10 18 58.77	51 51 11.93	5
	4	9 15 45.2	B. Z, 497, 29	9 49 37.29	44 31 46.47	10
	8	8 49 17.9	B. Z., 406, 7	9 9 38.26	29 16 8.71	12
	9	9 1 7.9	651, Madras	9 2 6.56	25 33 37.65	5
	15	8 56 45.8	1016, Σ. Cat. Gen.	8 30 17.26	7 7 7.46	10
	16	8 46 39.6	Weisse VIII, 851	8 26 26.50	4 42 20.23	3
	17	8 48 51.8	583, Santini	8 22 50.21	2 26 45.90	4
	18	8 56 28.7	588, Santini	8 19 28.58	+ 0 20 1.82	5
	22	8 49 59.3	16162, Lalande	8 8 2.41	— 6 39 33.29	12
	23	8 44 22.6	16069, Lalande	8 5 35.50	8 6 9.20	10
	24	8 25 39.4	Weisse VIII, 162	8 3 15.84	9 26 58.16	1
	25	8 39 25.5	Weisse VIII, 19	8 0 57.75	— 10 44 23.65	1
			LETO.			
June	13	9 34 4.7	Weisse XIII, 725	13 42 14.04	— 10 24 9.31	3
	14	8 58 29.3	Weisse XIII, 725	13 42 5.39	10 25 26.15	4
	18	8 54 49.2	Weisse XIII, 725	13 41 44.34	— 10 31 45.78	3
			EGERIA.			
June	14	10 34 30.9	6818, Lacaille	16 16 11.75	— 35 4 41.37	3
	18	10 8 57.2	6781, Lacaille	16 12 3.81	— 35 6 38.43	7
			COMET II, 1861.			
July	2	9 55 18.9	A. Z, 187, 74	8 43 13.71	+ 63 12 28.90	11
	3	8 46 52.6	2396, Radcliffe	9 51 47.59	66 10 3.00	2
	3	9 10 13.6	A. Z., 176, 26	9 52 57.64	66 11 46.28	5
	4	8 51 18.7	A. Z, 176, 113	10 58 41.86	66 54 30.52	12
	6	9 0 54.0	A. Z., 186, 96	12 31 16.04	64 51 2.89	4
	8	8 51 48.2	A. Z., 203, 66	13 20 49.58	61 50 2.83	10
	12	10 9 1.0	A. Z, 109, 92	14 7 36.78	56 58 10.86	5
	14	10 23 54.5	3188, Radcliffe	14 19 46.83	55 14 23.26	5
	16	9 10 57.8	3227, Radcliffe	14 28 24.46	53 52 12.29	10
	17	8 29 26.6	(* 105) W.	14 31 54.21	53 16 36.96	3
	20	9 59 6.7	3273, Radcliffe	14 40 38.23	51 42 27.49	5
	23	9 1 47.6	3293, Radcliffe	14 46 58.34	+ 50 13 18.62	7

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DATE.		M. T.—WASH.	COMPARISON STAR.	α	δ	No. of comp.
			COMET II, 1861—Continued.			
1861.		h. m. s.		h. m. s.	° ′ ″	
July	24	8 32 45.9	3293, Radcliffe	14 48 45.49	+ 50 9 28.24	10
	25	9 50 53.1	A. Z., 2, 22	14 50 29.65	49 49 15.39	11
	27	9 0 32.4	A. Z., 2, 23	14 53 38.67	49 12 24.35	7
	30	8 27 59.8	3317, Radcliffe	14 57 46.27	48 24 41.53	7
August	1	8 42 11.1	3317, Radcliffe	15 0 19.85	47 56 4.86	10
	4	8 48 54.1	1697, Σ. Cat. G.	15 3 53.51	47 17 34.21	6
	6	8 42 9.4	A. Z., 118, 8	15 6 8.97	46 54 16.18	5
	15	8 15 8.8	A. Z., 118, 21	15 15 53.95	45 26 27.28	7
	20	8 13 9.6	5093, Rumker	15 21 16.36	44 46 37.99	12
	23	8 38 49.4	3387, Radcliffe	15 24 33.22	44 24 55.85	7
	24	8 38 34.2	3411. Radcliffe	15 25 40.06	44 18 3.32	5
	31	8 22 25.4	3413, Radcliffe	15 33 31.54	43 34 35.27	10
September	2	8 31 59.7	3431, Radcliffe	15 35 52.12	43 23 27.73	12
	6	9 17 13.2	3448, Radcliffe	15 40 38.47	43 2 42.49	9
	7	8 23 32.3	3448, Radcliffe	15 41 47.83	42 58 13.66	5
	9	8 49 51.5	3462, Radcliffe	15 44 14.24	42 48 56.24	9
	13	8 44 1.5	3464, Radcliffe	15 49 12.62	42 32 15.02	7
	14	8 39 38.8	B. Z., 418, 60	15 50 28.45	42 28 17.86	10
	20	9 16 51.7	(* 106) W.	15 58 16.22	42 7 56.72	5
	22	8 5 1.2	(* 106) W.	16 0 51.10	42 2 21.95	10
	24	8 21 15.1	B. Z., 418, 76	16 3 32.75	41 57 8.35	7
	25	8 13 16.8	B. Z., 418, 76	16 4 53.71	41 54 44.79	10
	28	8 13 49.2	B. Z., 418, 86	16 9 0.13	41 48 6.47	4
	30	8 10 40.6	B. Z., 418, 85	16 11 46.28	41 44 35.51	7
	30	- - - -	B. Z., 418, 89	16 11 46.50	41 44 37.36	7
October	3	8 56 47.9	29874, Lalande	16 15 59.39	41 40 7.61	5
	8	8 15 18.1	B. Z., 418, 104	16 23 12.86	41 35 10.02	6
	12	8 25 44.7	(* 107) W.	16 29 8.28	41 33 50.90	3
	14	8 35 37.4	(* 107) W.	16 32 3.24	+ 41 33 59.13	5
			VIRGINIA.			
July	25	10 9 9.5	A. C., 20337	20 7 48.82	— 16 2 18.29	8
August	1	9 48 58.6	A. C., 20217	20 1 23.30	16 29 55.69	10
	2	9 24 19.6	A. C., 20217	20 0 30.47	16 33 52.45	14
	3	10 3 26.5	A. C., 20217	19 59 35.67	16 38 1.14	11
	4	9 42 33.8	A. C., 20217	19 58 43.72	16 42 1.37	12
	6	9 33 31.2	A. C., 20217	19 57 1.20	16 50 2.36	11
	20	9 22 55.3	A. C., 20055	19 47 19.56	17 43 28.95	10
	23	9 32 52.9	A. C., 20055	19 45 55.97	17 53 36.88	14
	24	9 49 28.0	A. C., 20055	19 45 31.79	— 17 56 56.98	20
			THEMIS.			
August	31	9 52 53.1	8085, B. A. C.	23 4 39.86	— 6 55 18.82	6
September	2	9 56 22.3	Weisse XXIII, 88	23 3 14.26	7 4 9.43	10
	6	10 29 19.6	Weisse XXII, 1202	23 0 19.42	7 21 53.59	4
	13	10 9 11.0	8016, B. A. C.	22 55 17.37	— 7 51 48.98	10
			CIRCE.			
September	14	10 7 31.7	Weisse XXIII, 783	23 38 51.21	— 0 35 45.72	8
	24	10 19 30.1	Weisse XXIII, 613	23 31 3.19	1 43 53.94	6
	25	10 28 51.9	Weisse XXIII, 613	23 30 19.39	— 1 50 23.09	10
			MELETE.			
September	30	9 36 9.5	Weisse XX, 849	20 35 15.21	— 10 25 22.37	9
October	3	9 6 11.8	(* 108) W.	20 37 40.69	10 37 0.05	5
	4	10 29 8.9	(* 108) W.	20 38 33.31	10 40 40.84	10
	8	9 29 1.3	Weisse XX, 1059	20 42 11.46	— 10 52 57.31	10
			IRENE.			
October	24	9 49 59.2	Weisse II, 585	2 33 15.64	+ 3 39 31.57	5
	29	9 32 44.5	Weisse II, 455	2 28 37.32	3 23 40.38	10
November	4	9 24 57.7	Weisse II, 415	2 22 59.51	+ 3 7 32.18	13

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DATE.	M. T.—WASH.	COMPARISON STAR.	α	δ	No. of comp.
		ENCKE'S COMET.			
1861.	h. m. s.		h. m. s.	° ′ ″	
November 7	10 14 58.2	Weisse XXII, 1159	22 56 3.17	+ 11 37 34.58	1
21	8 35 29.3	Weisse XXII, 658	34 12.66	8 25 26.44	2
26	7 33 13.8	Weisse XXII, 601	28 55.13	7 38 56.38	5
30	7 42 39.7	Weisse XXII, 518	25 36.53	6 46 38.74	10
December 3	8 40 7.8	(♑ 110) W.	23 34.22	6 17 45.28	5
4	8 3 59.6	Weisse XXII, 379	22 57.78	6 9 3.50	10
5	7 5 22.1	Weisse XXII, 379	22 27.09	6 0 16.76	6
19	7 25 16.9	Weisse XXII, 528	18 15.11	4 21 20.96	12
21	7 53 27.1	7827, B. A. C.	18 2.85	4 9 24.22	10
24	7 36 37.8	7827, B. A. C.	-17 49.83	3 52 29.58	10
25	7 49 28.0	7827, B. A. C.	17 46.55	3 46 39.11	6
27	8 41 12.0	7823, B. A. C.	17 40.42	3 35 8.30	10
30	7 28 45.4	(♑ 111) W.	17 29.94	3 17 42.01	13
31	7 59 27.4	Weisse XXII, 360	22 17 25.78	+ 3 11 12.88	13

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MEAN PLACES FOR 1860.0

OF

COMPARISON STARS,

USED IN

OBSERVATIONS WITH THE EQUATORIAL,

IN

1861.

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MEAN PLACES FOR 1860.0 OF COMPARISON STARS.

STAR.	MAG.	α	AUTHORITY.	δ	AUTHORITY.
		h. m. s.		° ′ ″	
			STARS COMPARED WITH TITANIA—(ECHO.)		
Weisse XXIII, 809	9	23 40 11.88	Weisse Catalogue	— 2 17 16.26	Weisse Catalogue.
			STARS COMPARED WITH MELPOMENE.		
Weisse VIII, 1146	8	8 44 42.08	Weisse Catalogue	+ 13 45 37.17	M.
Weisse VIII, 936	9	8 36 7.74	Weisse Catalogue	14 7 31.43	Weisse Catalogue.
2640, Rumker	9	8 38 15.97	Rumker Catalogue	+ 14 52 2.48	Rumker Catalogue.
			STARS COMPARED WITH PROSERPINE.		
B. Z., 278, 116	7	8 55 18.19	Bessel's Zones	+ 23 9 43.55	Bessel's Zones.
B. Z., 344, 66	9	8 57 0.75	Bessel's Zones	+ 23 20 12.76	Bessel's Zones.
			STARS COMPARED WITH COMET 1861, I.		
A. Z, 117, 39	9	17 7 31.14	Argelander's Zones	+ 59 20 42.05	Argelander's Zones.
A. Z., 125, 35	9	16 56 39.46	Argelander's Zones	60 0 26.30	Argelander's Zones.
A. Z, 125, 9	7	16 39 32.93	T.	62 34 25.86	Argelander & Rumker.
A. Z, 123, 2	8	16 4 46.43	T.[2]	65 3 34.55	Argelander's Zones.
A. Z., 116, 120	8.5	15 44 49.16	T.	66 17 37.53	Argelander's Zones.
A. Z, 116, 121	8	15 45 17.68	T.	66 17 42.96	Argelander's Zones.
(*) Madrass, 1029	9	15 37 5.30	Washington Equatorial	66 14 48.97	Washington Equatorial.
A. Z., 116, 71	7.5	15 12 8.84	T.	67 22 46.41	Argelander's Zones.
4365, B. A. C.	5.5	12 54 36.94	Radcliffe and B. A. C.	67 21 11.57	Radcliffe & B. A. C.
2860, Radcliffe	6	12 18 33.39	Radcliffe Catalogue	64 34 43.73	M.
2936, Radcliffe	6	12 49 53.01	T.	66 11 56.26	Radcliffe & B. A. C.
A. Z., 186, 59	8	11 49 57.76	Argelander's Zones	63 0 41.30	Argelander's Zones.
3497, Rumker	8	11 9 9.24	Rumker Catalogue	61 2 7.48	M.
2582, Radcliffe	7	10 47 50.58	Radcliffe Catalogue	58 14 59.63	Radcliffe Catalogue.
2472, Radcliffe	7	10 10 3.79	Radcliffe Catalogue	52 6 14.95	M.
B. Z., 497, 29	9	9 47 47.14	Bessel's Zones	44 38 30.08	Bessel's Zones.
B. Z., 406, 7	8	9 9 34.25	Bessel's Zones	29 10 5.83	Bessel's Zones.
651, Madrass	7	9 6 18.37	Madrass Catalogue	25 35 22.24	M.
1016, Σ Cat. Gen.	6	8 28 24.64	Σ Cat. Gen.	7 6 21.82	M.
Weisse, VIII, 51	9	8 32 51.92	Weisse Catalogue	4 53 24.51	Weisse Catalogue.
583, Santini	7	8 18 19.36	T.	2 33 22.00	M.
588, Santini	8	8 21 58.06	T.	+ 0 9 46.52	M.
16162, Lalande	9	8 8 15.55	Lalande Catalogue	— 6 29 20.23	M
16069, Lalande	9	8 5 25.74	Lalande Catalogue	8 7 4.79	Lalande Catalogue.
Weisse VIII, 162	9	8 7 15.88	Weisse Catalogue	9 36 41.77	Weisse Catalogue.
Weisse VIII, 19	7	8 2 18.65	Weisse Catalogue	— 10 55 58.50	M.
			STAR COMPARED WITH LETO.		
Weisse XIII, 725	9	13 42 23.48	Weisse Catalogue	— 10 18 38.51	Weisse Catalogue.
			STARS COMPARED WITH EGERIA.		
6818, Lacaille	7	16 15 21.92	T.[2]	— 34 50 41.32	M.[2]
6781, Lacaille	7	16 10 8.46	T.[2]	— 35 8 37.25	M.[2]
			STARS COMPARED WITH COMET 1861, II.		
A. Z, 187, 74	8.5	8 42 21.24	Argelander's Zones	+ 63 6 29.39	M.[2]
2396, Radcliffe	6.2	9 39 22.18	Radcliffe Catalogue	66 14 31.74	M.[2]
A. Z, 176, 26	9	9 48 36.92	Argelander's Zones	66 0 13.46	M.[2]
A. Z., 176, 113	7.5	10 57 12.48	Argelander's Zones	66 37 57.87	M.
A. Z., 186, 96	8	12 25 39.35	Argelander & Rumker	64 31 51.92	Argelander & Rumker.
A. Z, 203, 66	9	13 21 51.71	Argelander's Zones	61 57 3.46	M.
A. Z., 109, 92	8.5	14 9 11.45	Argelander's Zones	56 58 24.61	Argelander's Zones.
3188, Radcliffe	7	14 14 17.07	Radcliffe, Rumker, & Argelander	55 30 32.00	M.
3227, Radcliffe	6.8	14 28 55.21	Radcliffe Catalogue	53 30 55.04	M.
(* 105) W.	10.5	14 36 19.83	Washington Equatorial	53 1 55.84	Washington Equatorial.
3273, Radcliffe	6.6	14 44 59.75	Radcliffe Catalogue	51 57 20.00	Radcliffe Catalogue.
3293, Radcliffe	5.8	14 51 44.21	Radcliffe Catalogue	50 12 11.52	Radcliffe Catalogue.
A. Z, 2, 22	9	14 51 16.09	Argelander's Zones	49 38 57.45	Argelander's Zones.
A. Z, 2, 23	7	14 52 25.55	Argelander's Zones	+ 48 57 12.80	Argelander's Zones.

* The star of comparison determined by a single observation.

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MEAN PLACES FOR 1860.0 OF COMPARISON STARS.

STAR.	MAG.	α	AUTHORITY.	δ	AUTHORITY.
			STARS COMPARED WITH COMET 1861, II—(Continued)		
		h. m. s.		° ′ ″	
3317, Radcliffe	7	14 59 10.68	Radcliffe Catalogue	+ 48 12 0.57	Radcliffe Catalogue.
1697, Σ Cat. Gen., p.	9	15 6 7.00	Argelander & Struve	47 22 47.63	Argelander & Struve.
A. Z, 118, 8	9	15 3 59.12	Argelander's Zones	47 0 50.86	Argelander's Zones.
A. Z., 118, 21	7	15 13 52.58	Argelander & Rumker	45 31 38.52	Argelander & Rumker.
5093, Rumker	7.4	15 21 11.56	Radcliffe & Rumker	44 47 37.22	Radcliffe & Rumker.
3387, Radcliffe	7.6	15 21 36.47	Radcliffe Catalogue	44 29 48.88	Radcliffe & Rumker.
3411, Radcliffe	7	15 30 3.34	Radcliffe Catalogue	44 31 58.05	Radcliffe Catalogue.
3413, Radcliffe	6.8	15 30 22.15	Radcliffe Catalogue	43 37 58.28	Radcliffe Catalogue.
3431, Radcliffe	7	15 34 43.27	Radcliffe Catalogue	43 9 6.14	Radcliffe Catalogue.
3448, Radcliffe	7	15 41 26.92	Radcliffe Catalogue	42 54 15.43	Radcliffe Catalogue.
3462, Radcliffe	7	15 46 12.48	Radcliffe Catalogue	42 59 13.60	Radcliffe Catalogue.
3464, Radcliffe	5	15 47 50.09	Radcliffe & Rumker	42 50 42.79	Radcliffe & Rumker.
B. Z., 418, 60	8	15 53 1.10	Bessel's Zones	42 38 23.01	Bessel's Zones.
(☆ 106) W.	9	15 59 52.74	Washington Equatorial	42 17 11.22	Washington Equatorial.
B. Z., 418, 76	9	16 5 18.80	Bessel's Zones	42 11 23.91	Bessel's Zones.
B. Z., 418, 85	9	16 10 44.32	Bessel's Zones	41 40 27.75	Bessel's Zones.
B. Z., 418, 89	8	16 12 52.78	Bessel's Zones	41 46 27.58	Bessel's Zones.
29874, Lalande	8	16 16 43.18	Lalande Catalogue	41 46 6.60	Lalande Catalogue.
B. Z., 418, 104	8	16 23 29.21	Bessel's Zones	41 46 7.56	Bessel's Zones.
B. Z., 426, 6	7.5	16 37 34.05	Bessel's Zones	41 27 44.12	Bessel's Zones.
(☆ 107) W.	9	16 32 1.96	Washington Equatorial	+ 41 40 25.22	Washington Equatorial.
			STARS COMPARED WITH VIRGINIA.		
A. C., 20337	9	20 6 40.37	T.[1]	— 15 45 15.75	M.[3]
A. C., 20217	8.5	19 57 23.86	T.[1]	16 45 58.42	M.[3]
A. C., 20005	9	19 46 5.65	T.[1]	— 17 46 22.99	M.[3]
			STARS COMPARED WITH THEMIS.		
8085, B. A. C.	5	23 7 4.23	T.	— 6 48 10.27	M.
Weisse XXIII, 88	9	23 6 15.49	T.	7 5 8.30	M.
Weisse XXII, 1203	8	22 57 6.73	T.	7 26 29.62	M.
8016, B. A. C.	6	22 54 6.85	T.	— 7 48 41.04	M.
			STARS COMPARED WITH CIRCE.		
Weisse XXIII, 783	8	23 38 49.90	T.[1]	— 0 30 47.42	M.[1]
Weisse XXIII, 613	9	23 30 5.14	T.[1]	— 1 49 28.45	Weisse Catalogue.
			STARS COMPARED WITH MELETE.		
Weisse XX, 849	9	20 33 31.17	Weisse Catalogue	— 10 8 11.42	M.[1]
(☆ 108) W.	9.5	20 38 17.58	T.	10 29 31.50	M.[1]
Weisse XX, 1059	9	20 41 34.87	T.[2]	— 10 52 19.43	Weisse Catalogue.
			STARS COMPARED WITH IRENE.		
Weisse II, 585	7	2 34 2.61	T.	+ 3 49 41.50	M.[2]
Weisse II, 455	8	2 27 50.78	T.[2]	3 30 47.16	M.[2]
Weisse II, 415	8	2 25 22.26	T.[2]	+ 3 7 8.77	M.[1]
			STARS COMPARED WITH ENCKE'S COMET.		
Weisse XXII, 1159	6	22 55 12.39	T.[2]	+ 11 47 7.75	M.[2]
Weisse XXII, 658	7	22 31 26.23	T.[1]	8 31 52.69	Weisse Catalogue.
Weisse XXII, 601	8	22 29 9.25	T.[2]	7 32 54.70	Weisse Catalogue.
Weisse XXII, 518	9	22 25 2.42	T.[1]	6 41 8.03	Santini Catalogue.
(☆ 110) W.	9.5	22 23 51.28	T.[1]	6 31 19.87	Washington Equatorial.
Weisse XXII, 379	9	22 18 8.75	Weisse & Rumker	6 8 58.44	Weisse & Rumker.
Weisse XXII, 358	9	22 17 17.53	Weisse Catalogue	4 21 15.47	Weisse Catalogue.
7827, B. A. C.	5	22 20 46.55	B. A. Catalogue	3 59 42.81	B. A. Catalogue.
7823, B. A. C.	5.5	22 19 29.74	B. A. Catalogue	3 40 51.91	B. A. Catalogue.
(☆ 111) W.	9.5	22 16 51.32	Washington Equatorial	3 22 40.10	Washington Equatorial.
Weisse XXII, 360	9	22 17 22.39	Weisse Catalogue	+ 3 6 49.85	Weisse Catalogue.

The letters T. and M. indicate that the place depends upon one or more observations of the Transit or Mural of the Observatory.

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TABLE

OF

ZENITH DISTANCES

TO 80°,

FOR THE LATITUDE

OF THE

UNITED STATES NAVAL OBSERVATORY,

WASHINGTON.

Hosted by Google

Declination.	0 hour.						I hour.					
	0m.	10m.	20m.	30m.	40m.	50m.	0m.	10m.	20m.	30m.	40m.	50m.
°	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
+ 90	51 6.3	51 6.3	51 6.3	51 6.3	51 6.3	51 6.3	51 6.3	51 6.3	51 6.3	51 6.3	51 6.3	51 6.3
89	50 6.3	50 6.4	50 6.5	50 6.8	50 7.2	50 7.8	50 8.5	50 9.1	50 10.0	50 11.0	50 12.0	50 13.2
88	49 6.3	49 6.5	49 6.7	49 7.4	49 8.2	49 9.2	49 10.6	49 12.0	49 13.8	49 15.7	49 17.9	49 20.3
87	48 6.3	48 6.6	48 6.9	48 7.9	48 9.1	48 10.8	48 12.8	48 15.1	48 17.7	48 20.6	48 24.0	48 27.5
86	47 6.3	47 6.6	47 7.2	47 8.5	47 10.1	47 12.3	47 15.1	47 17.9	47 21.7	47 25.7	47 30.2	47 35.0
85	46 6.3	46 6.6	46 7.5	46 9.1	46 11.2	46 14.0	46 17.3	46 21.3	46 25.8	46 30.9	46 36.5	46 42.9
84	45 6.3	45 6.7	45 7.8	45 9.7	45 12.3	45 15.6	45 19.8	45 24.5	45 30.1	45 36.2	45 43.2	45 50.7
83	44 6.3	44 6.8	44 8.1	44 10.3	44 13.4	44 17.4	44 23.7	44 28.0	44 34.5	44 41.8	44 50.0	44 58.9
82	43 6.3	43 6.8	43 8.3	43 11.0	43 14.6	43 19.3	43 25.1	43 31.4	43 39.1	43 47.5	43 57.0	44 7.3
81	42 6.3	42 6.9	42 8.6	42 11.7	42 15.7	42 21.1	42 27.6	42 35.1	42 43.8	42 53.6	43 4.3	43 16.1
80	41 6.3	41 7.0	41 9.0	41 12.3	41 17.0	41 23.1	41 30.4	41 38.9	41 48.6	41 59.7	42 11.8	42 25.2
79	40 6.3	40 7.1	40 9.2	40 13.0	40 18.3	40 25.0	40 33.4	40 42.8	40 53.7	41 6.0	41 19.7	41 34.5
78	39 6.3	39 7.2	39 8.9	39 13.8	39 19.6	39 27.1	39 36.3	39 46.7	39 59.0	40 12.6	40 27.9	40 44.3
77	38 6.3	38 7.2	38 10.0	38 14.6	38 21.2	38 29.3	38 39.5	38 51.0	39 4.5	39 15.6	39 36.3	39 54.4
76	37 6.3	37 7.3	37 10.4	37 15.4	37 22.5	37 31.6	37 42.7	37 55.4	38 10.3	38 26.8	38 45.0	39 4.9
75	36 6.3	36 7.4	36 10.7	36 13.3	36 24.1	36 33.9	36 42.2	37 0.1	37 16.3	37 34.3	37 54.2	38 15.8
74	35 6.3	35 7.6	35 11.2	35 17.2	35 25.8	35 36.3	35 49.7	36 5.0	36 22.4	36 42.0	37 3.8	37 27.2
73	34 6.3	34 7.7	34 11.6	34 18.2	34 27.4	34 39.1	34 53.3	35 10.1	35 29.1	35 50.2	36 13.8	36 39.1
72	33 6.3	33 7.8	33 12.0	33 19.1	33 29.3	33 41.9	33 57.3	34 15.2	34 35.9	34 58.8	35 24.0	35 51.3
71	32 6.3	32 8.0	32 12.5	32 20.2	32 31.0	32 44.9	33 1.6	33 20.9	33 43.1	34 7.8	34 34.9	35 4.3
70	31 6.3	31 8.1	31 13.0	31 21.2	31 33.0	31 47.9	32 5.9	32 26.6	32 50.6	33 17.0	33 46.2	34 17.6
69	30 6.3	30 8.1	30 13.6	30 22.4	30 35.1	30 52.9	31 10.4	31 32.9	31 58.6	32 26.9	32 58.2	33 31.9
68	29 6.3	29 8.3	29 14.0	29 23.8	29 37.4	29 54.5	30 15.4	30 39.4	31 6.9	31 37.2	32 10.8	32 46.6
67	28 6.3	28 8.6	28 14.7	28 25.1	28 39.7	28 58.1	29 20.7	29 46.2	30 15.6	30 48.1	31 23.9	32 2.0
66	27 6.3	27 8.7	27 15.3	27 26.7	27 42.3	28 2.0	28 25.9	28 53.6	29 24.9	29 59.6	30 37.6	31 18.2
65	26 6.3	26 8.9	26 16.1	26 28.1	26 44.8	27 6.0	27 31.8	28 1.3	28 34.7	29 11.9	29 51.9	30 35.5
64	25 6.3	25 8.8	25 16.8	25 29.8	25 47.8	26 10.5	26 38.0	27 9.6	27 45.3	28 24.7	29 7.6	29 53.4
63	24 6.3	24 9.1	24 17.5	24 31.7	24 50.7	25 16.3	25 44.5	26 18.3	26 54.4	27 38.3	28 33.9	29 12.4
62	23 6.3	23 9.4	23 18.4	23 33.4	23 54.1	24 20.3	24 51.6	25 27.7	26 8.3	26 52.5	27 41.0	28 32.3
61	22 6.3	22 9.6	22 19.4	22 35.4	22 57.7	23 25.6	23 59.3	24 37.7	25 20.8	26 8.1	26 59.1	27 53.1
60	21 6.3	21 9.9	21 20.3	21 37.8	22 1.6	22 31.6	23 7.4	23 48.4	24 34.1	25 24.1	26 18.1	27 15.5
59	20 6.3	20 10.1	20 21.5	20 40.2	21 5.9	21 38.0	22 16.3	22 59.8	23 48.6	24 21.7	25 38.6	26 38.9
58	19 6.3	19 10.5	19 22.7	19 42.9	20 10.1	20 44.8	21 25.8	22 12.2	23 4.0	24 0.2	25 0.3	26 3.7
57	18 6.3	18 10.8	18 24.0	18 45.8	19 15.2	19 52.5	20 36.2	21 25.8	22 20.7	23 19.8	24 23.3	25 30.0
56	17 6.3	17 11.2	17 25.5	17 49.0	18 21.0	19 0.7	19 47.5	20 40.2	21 38.4	22 41.1	23 47.8	24 57.8
55	16 6.3	16 11.6	16 27.2	16 52.6	17 27.0	18 9.6	18 59.8	19 56.0	20 57.6	22 3.8	23 13.8	24 27.2
54	15 6.3	15 12.1	15 28.9	15 56.6	16 34.0	17 20.0	18 13.2	19 13.0	20 18.2	21 28.0	22 41.6	23 58.2
53	14 6.3	14 12.7	14 31.0	15 1.1	15 41.3	16 31.0	17 28.1	18 31.5	19 40.6	20 54.0	22 11.2	23 31.2
52	13 6.3	13 13.0	13 33.3	14 6.3	14 50.0	15 43.3	16 44.3	17 51.7	19 4.9	20 22.0	22 42.7	23 6.0
51	17 6.3	12 13.8	12 36.2	13 12.1	13 59.5	14 57.0	16 2.4	17 14.0	18 30.9	19 52.0	21 16.3	22 43.2
50	11 6.3	11 14.7	11 39.4	12 18.9	13 10.3	14 12.3	15 22.3	16 38.5	17 59.5	19 24.2	20 52.1	22 22.0
49	10 6.3	10 15.6	10 43.4	11 26.7	12 23.0	13 29.6	14 44.4	16 5.0	17 30.3	18 59.0	20 30.3	22 3.6
48	9 6.3	9 17.0	9 47.8	10 35.9	11 37.5	12 49.3	14 9.1	15 34.2	17 3.7	18 36.0	20 10.9	21 47.2
47	8 6.3	8 18.4	8 53.5	9 46.8	10 54.0	12 12.0	13 36.5	15 6.6	16 39.9	18 15.8	19 54.1	21 33.6
46	7 6.3	7 20.2	8 0.2	8 59.9	10 14.0	11 37.0	13 7.2	14 41.6	16 19.1	17 58.6	19 40.0	21 22.2
45	6 6.3	6 22.9	7 8.7	8 15.8	9 36.6	11 6.5	12 41.4	14 20.2	16 1.5	17 44.5	19 28.7	21 13.6
44	5 6.3	5 26.4	6 19.4	7 35.4	9 3.5	10 39.0	12 19.4	14 2.3	15 47.3	17 33.2	19 20.3	21 7.6
43	4 6.3	4 30.9	5 34.6	6 59.5	8 35.0	10 17.0	12 1.8	13 48.6	15 36.7	17 25.5	19 14.9	21 4.4
42	3 6.3	3 38.4	4 54.5	6 29.7	8 12.5	9 59.5	11 48.8	13 39.0	15 29.7	17 21.0	19 12.4	21 3.8
41	2 6.3	2 50.8	4 22.3	6 7.3	7 56.0	9 48.3	11 40.5	13 33.3	15 26.5	17 19.7	19 12.9	21 6.0
40	1 6.3	2 13.0	4 1.0	5 54.0	7 48.0	9 42.2	11 37.3	13 32.6	15 27.1	17 22.1	19 16.5	21 10.9
39	0 6.3	1 56.0	3 54.0	6 11.0	7 47.0	9 42.6	11 39.2	13 35.5	15 31.4	17 27.5	19 23.2	21 18.5
38	0 53.7	2 9.0	4 1.0	5 56.0	7 53.5	9 49.6	11 46.1	13 43.0	15 39.4	17 36.7	19 32.6	21 28.6
37	1 53.7	2 44.9	4 23.0	6 13.5	8 7.0	10 2.0	11 57.9	13 54.3	15 51.1	17 48.7	19 44.8	21 41.4
36	2 53.7	3 31.0	4 54.7	6 38.0	8 27.5	10 20.0	12 14.5	14 10.7	16 6.3	18 3.6	19 59.9	21 56.6
35	3 53.7	4 23.0	5 35.0	7 8.0	8 53.5	10 43.0	12 35.6	14 29.6	16 25.0	18 21.8	20 17.6	22 14.2
34	4 53.7	5 18.0	6 20.0	7 47.0	9 25.0	11 10.8	13 0.0	14 53.0	16 46.6	18 41.8	20 37.9	22 34.1
33	5 53.7	6 14.0	7 9.0	8 28.5	10 1.0	11 42.0	13 29.0	15 19.0	17 11.2	19 5.5	21 0.6	22 56.4
32	6 53.7	7 12.0	8 6.7	9 13.5	10 40.5	12 17.6	14 0.3	15 48.3	17 38.7	19 32.8	21 25.6	23 20.6
31	7 53.7	8 9.2	8 53.5	10 1.0	11 22.6	12 55.6	14 34.5	16 20.2	18 8.7	19 59.9	21 52.6	23 47.2
30	8 53.7	9 8.6	9 47.9	10 50.5	12 7.3	13 35.9	15 12.0	16 54.8	18 41.0	20 30.5	22 22.1	24 15.1
29	9 53.7	10 7.0	10 44.5	11 41.3	12 54.6	14 19.0	15 52.2	17 31.5	19 15.2	21 3.1	22 53.0	24 44.9
28	10 53.7	11 6.6	11 39.3	12 34.5	13 42.3	15 4.5	16 33.0	18 10.2	19 50.5	21 37.6	23 25.1	25 16.9
27	11 53.7	12 5.6	12 37.5	13 28.3	14 32.8	15 47.5	17 17.0	18 51.7	20 29.7	22 13.6	24 0.3	25 46.8
26	12 53.7	13 4.3	13 33.8	14 22.0	15 24.0	16 38.1	18 1.4	19 33.8	21 9.6	22 51.5	24 36.5	26 24.4
+ 25	13 53.7	14 4.0	14 32.5	15 17.0	16 16.0	17 27.2	18 48.2	20 16.2	21 50.8	23 30.8	25 14.0	27 0.3

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Declination.	II hours.						III hours.					
	0m.	10m.	20m.	30m.	40m.	50m.	0m.	10m.	20m.	30m.	40m.	50m.
°	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
+ 90	51 6.3	51 6.3	51 6.3	51 6.3	51 6.3	51 6.3	51 6.3	51 6.3	51 6.3	51 6.3	51 6.3	51 6.3
89	50 14.5	50 15.9	50 17.3	50 18.9	50 20.5	50 22.3	50 24.2	50 26.0	50 28.1	50 35.0	49 25.8	50 29.1
88	49 22.9	49 25.6	49 28.6	49 31.8	49 35.1	49 38.7	49 43.4	49 46.2	49 50.2	49 54.7	48 50.9	49 58.0
87	48 30.9	48 35.7	48 33.3	48 45.0	48 50.1	48 55.5	49 1.1	49 6.9	49 12.9	49 19.7	48 16.6	49 27.4
86	47 40.3	47 46.1	47 52.1	47 58.7	48 5.5	48 12.7	48 20.3	48 28.1	48 36.3	48 45.1	47 42.9	48 57.5
85	46 49.5	46 56.9	47 4.4	47 12.7	47 21.3	47 30.4	47 39.9	47 49.8	48 0.1	48 11.2	47 9.9	48 28.3
84	45 58.9	46 7.6	46 17.1	46 27.1	46 37.5	46 48.4	47 0.1	47 12.2	47 24.6	47 37.9	46 37.6	47 59.9
83	45 7.6	45 18.9	45 30.0	45 41.8	45 54.2	46 7.2	46 26.9	46 35.0	46 49.7	47 5.3	46 6.0	47 32.1
82	44 18.5	44 30.6	44 43.5	44 57.0	45 11.4	45 26.5	45 42.2	45 58.5	46 15.5	46 33.4	45 35.2	47 5.0
81	43 28.9	43 42.6	43 57.3	44 12.8	44 29.2	44 46.4	45 4.2	45 22.7	45 42.0	46 2.2	45 5.0	46 38.9
80	42 39.6	42 55.1	43 11.5	43 29.0	43 47.4	44 6.8	44 26.8	44 47.7	45 9.2	45 31.4	45 54.2	46 17.6
79	41 50.6	42 7.9	42 26.3	42 45.8	43 6.3	43 27.7	43 50 0	44 13.1	44 37.0	45 1.7	45 27.0	45 53.3
78	41 2.0	41 21.3	41 41.5	42 3.0	42 25.7	42 49.3	43 14.0	43 39.4	44 5.7	44 32.8	45 0.6	45 29.0
77	40 14.0	40 35.1	40 57.4	41 21.0	41 45.7	42 11.7	42 38.6	43 6.4	43 35.2	44 4.8	44 35.1	45 6.1
76	39 26.4	39 49.4	40 13.6	40 39.4	41 6.5	41 34.7	42 4.0	42 34.3	43 5.5	43 37.6	44 10.4	44 44.0
75	38 39.2	39 4.2	39 30.6	39 58.6	40 27.9	40 58.5	41 30.2	42 2.9	42 36.6	43 11.3	43 46.7	44 22.8
74	37 52.5	38 19.6	38 49.2	39 18.5	39 50.1	40 23.0	40 57.2	41 32.4	42 8.6	42 45.8	43 23.9	44 2.5
73	37 6.4	37 35.6	38 6.5	38 39.1	39 13.0	39 48.4	40 25.0	41 2.7	41 41.5	42 21.3	43 1.9	43 43.3
72	36 20.9	36 52.2	37 25.4	38 0.3	38 36.7	39 14.5	39 54.7	40 34.0	41 15.5	41 57.8	42 41.0	43 25.0
71	35 35.8	36 9.4	36 45.1	37 22.4	38 1.2	38 41.7	39 23.4	40 6.3	40 50.3	41 35.3	42 21.2	43 7.7
70	34 51.6	35 27.6	36 5.6	36 45.2	37 26.8	38 9.7	38 54.0	39 36.6	40 26.3	41 13.8	42 2.3	42 51.5
69	34 8.0	34 46.3	35 26.9	36 9.1	36 53.1	37 38.6	38 31.5	39 13.8	40 3.1	40 53.4	41 44.5	42 36.3
68	33 25.1	34 6.0	34 48.9	35 33.9	36 20.4	37 8.5	37 58.2	38 49.1	39 41.1	40 33.9	41 27.7	42 22.1
67	32 43.2	33 26.5	34 12.1	34 59.4	35 48.8	36 39.7	37 31.9	38 25.6	39 20.1	40 15.7	41 12.1	42 9.2
66	32 1.9	32 47.9	33 36.0	34 26.2	35 18.2	36 11.8	37 6.8	38 3.0	39 0.3	39 58.5	40 57.6	41 57.1
65	31 21.6	33 10.2	33 1.1	33 54.0	34 48.8	35 44.9	36 42.8	37 41.7	38 41.6	39 42.6	40 44.2	41 46.4
64	30 42.3	31 33.7	32 27.1	33 23.0	34 20.4	35 19.6	36 19.9	37 21.6	38 24.2	39 27.7	40 32.0	41 36.6
63	30 4.0	30 58.1	31 54.4	32 53.0	33 53.3	34 55.2	35 58.3	37 2.7	38 8.0	39 14.1	40 20.9	41 28.2
62	29 26.7	30 23.7	31 23.0	32 24.4	33 27.4	34 32.0	35 38.0	36 45.1	37 53.0	39 1.8	40 11.0	41 20.9
61	28 50.6	29 50.6	30 52.7	31 57.0	33 2.9	34 10.3	35 19.0	36 28.7	37 39.3	38 50.6	40 2.5	41 14.7
60	28 15.7	29 18.6	30 23.9	31 31.0	32 39.6	33 49.9	35 1.3	36 13.7	37 26.9	38 40.8	39 55.0	41 9.7
59	27 42.3	28 48.1	29 56.3	31 6.4	32 17.9	33 30.9	34 45.0	36 0.4	37 15.8	38 32.0	39 48.8	41 5.8
58	27 10.2	28 19.0	29 30.2	30 43.2	31 57.6	33 13.4	34 30.1	35 48.1	37 6.0	32 24.8	39 43.9	41 3.3
57	26 39.5	27 51.6	29 5.6	30 21.5	31 38.7	32 57.2	34 16.6	35 37.1	36 57.5	38 18.8	39 40.2	41 1.9
56	26 10.5	27 25.6	28 42.6	30 1.5	31 21.4	32 42.6	34 4.6	35 27.7	36 50.5	38 14.0	39 37.8	41 1.7
55	25 43.1	27 1.3	28 21.3	29 43.0	31 5.7	32 29.6	33 54.1	35 19.3	36 44.8	38 10.6	39 36.7	41 2.7
54	25 17.4	26 38.7	28 1.7	29 26.0	30 51.6	32 18.1	33 45.1	35 12.8	36 40.5	38 8.6	39 36.8	41 5.0
53	24 53.6	26 18.0	27 43.9	29 11.1	30 39.2	32 8.0	33 37.7	35 7.6	36 37.6	38 7.9	39 38.2	41 8.4
52	24 31.7	25 59.2	27 27.9	28 57.9	30 28.5	31 59.9	33 31.8	35 4.0	36 36.2	38 8.5	39 40.8	41 13.0
51	24 11.8	25 42.2	27 13.8	28 46.3	30 19.5	31 53.2	33 27.4	35 1.8	36 36.1	38 10.5	39 44.7	41 18.9
50	23 54.0	25 27.3	27 1.6	28 36.7	30 12.3	31 48.4	33 24.7	35 1.1	36 37.5	38 13.7	39 49.8	41 25.8
49	23 38.5	25 14.5	26 51.4	28 29.0	30 6.9	31 45.1	33 23.5	35 1.9	36 40.2	38 18.4	39 56.2	41 34.0
48	23 25.1	25 3.8	26 43.2	28 23.1	30 3.2	31 43.6	33 23.9	35 4.1	36 44.4	38 24.3	40 3.9	41 43.4
47	23 14.1	24 55.3	26 37.1	28 19.1	30 1.4	31 43.8	33 25.9	35 8.0	36 49.9	38 31.5	40 12.7	41 53.8
46	23 5.5	24 49.0	26 33.0	28 17.3	30 1.3	31 45.6	33 29.5	35 13.2	36 56.8	38 40.1	40 22.8	42 5.4
45	22 59.2	24 45.0	26 31.0	28 17.3	30 3.1	31 49.1	33 34.7	35 20.0	37 5.1	38 49.8	40 34.0	42 18.2
44	22 55.4	24 43.2	26 31.2	28 19.1	30 6.7	31 54.2	33 41.4	35 28.2	37 14.8	39 1.0	40 46.4	42 31.9
43	22 54.1	24 43.8	26 33.4	28 23.0	30 12.1	32 1.1	33 49.6	35 37.8	37 25.8	39 13.3	41 0.0	42 46.8
42	22 55.3	24 46.7	26 37.7	28 28.7	30 19.2	32 9.8	33 59.4	35 48.9	37 38.1	39 26.8	41 14.7	43 2.7
41	22 58.9	24 51.6	26 44.1	28 36.4	30 28.2	32 19.8	34 0.7	36 1.3	37 51.7	39 41.5	41 30.6	43 19.7
40	23 5.0	24 58.8	26 52.5	28 45.8	30 38.8	32 31.6	34 23.5	36 15.2	38 6.5	39 57.3	41 47.5	43 37.2
39	23 13.5	25 8.5	27 3.1	28 47.2	30 51.2	32 44.9	34 37.9	36 30.6	38 22.9	40 14.4	42 10.1	43 56.4
38	23 24.9	25 20.1	27 15.7	29 10.6	31 5.2	32 59.6	34 53.4	36 47.1	38 40.3	40 32.6	42 24.9	44 16.2
37	23 37.7	25 34.0	27 30.0	29 25.5	31 21.0	33 16.0	35 10.4	37 4.9	38 58.7	40 52.0	42 44.9	44 37.2
36	23 53.2	25 49.6	27 47.7	29 42.4	31 38.1	33 33.9	35 28.8	37 24.0	39 18.2	41 12.4	43 6.0	44 59.0
35	24 10.6	26 7.5	28 4.3	30 0.7	31 57.0	33 53.1	35 48.7	37 44.2	39 39.4	41 33.7	43 28.0	45 29.5
34	24 30.8	26 27.3	28 24.1	30 20.8	32 16.9	34 13.8	36 9.5	38 5.7	40 1.3	41 56.2	43 50.9	45 45.4
33	24 52.2	26 49.0	28 45.6	30 42.3	32 39.9	34 35.6	36 32.0	38 28.4	40 24.3	42 19.6	44 15.0	46 9.8
32	25 17.3	27 13.3	29 8.9	31 5.5	33 2.4	34 59.0	36 55.2	38 52.1	40 48.3	42 44.0	44 39.9	46 35.1
31	25 41.3	27 37.3	29 33.6	31 30.1	33 26.5	35 23.5	37 20.0	39 16.8	41 13.5	43 9.4	45 5.5	47 1.1
30	26 9.1	28 4.1	29 59.9	31 56.0	33 52.5	35 49.2	37 45.6	39 42.8	41 39.5	43 35.7	45 32.0	47 28.0
29	26 37.7	28 32.3	30 27.8	32 23.4	34 19.6	36 16.2	38 13.1	40 9.4	42 6.5	44 2.9	45 59.4	47 55.6
28	27 7.5	29 2.0	30 56.6	32 52.0	34 47.8	36 38.5	38 40.4	40 37.5	42 34.3	44 30.9	46 27.6	48 24.8
27	27 40.4	29 33.1	31 27.1	33 21.8	35 17.2	37 13.4	39 9.5	41 6.4	43 3.1	44 59.6	46 56.5	48 53.1
26	28 14.4	30 5.2	31 58.8	33 52.9	35 47.9	37 43.5	39 39.2	41 36.1	43 32.7	45 29.2	47 26.1	49 22.9
+ 25	28 48.6	30 40.4	32 31.8	34 25.1	36 19.3	38 14.7	40 10.3	42 6.7	44 3.2	45 59.7	47 56.6	49 53.6

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Declination.	IV hours.						V hours.					
	0m.	10m.	20m.	30m.	40m.	50m.	0m.	10m.	20m.	30m.	40m.	50m.
°	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
+ 90	51 6.3	51 6.3	51 6.3	51 6.3	51 6.3	51 6.3	51 6.3	51 6.3	51 6.3	51 6.3	51 6.3	51 6.3
89	50 36.6	50 39.0	50 41.3	50 43.8	50 46.2	50 48.6	50 51.2	50 53.8	50 56.4	50 58.9	51 1.6	51 4.2
88	50 7.6	50 13.0	50 17.1	50 21.9	50 26.8	50 31.8	50 36.9	50 42.0	50 47.2	50 52.4	50 57.6	51 2.8
87	49 39.3	49 46.4	49 53.5	50 0.8	50 8.2	50 15.7	50 24.0	50 31.1	50 38.9	50 46.7	50 54.4	51 2.3
86	49 12.1	49 21.1	49 30.6	49 40.5	49 50.4	50 5.5	50 10.7	50 21.0	50 31.4	50 41.8	50 52.2	51 2.7
85	48 44.8	48 56.6	49 8.6	49 20.9	49 33.4	49 46.1	49 58.9	50 11.7	50 24.7	50 37.8	50 50.8	51 3.9
84	48 18.3	48 32.9	48 47.3	49 2.2	49 17.3	49 32.5	49 47.9	50 3.3	50 18.9	50 34.7	50 50.2	51 5.9
83	47 53.0	48 9.9	48 26.9	48 44.3	49 1.9	49 19.7	49 37.7	49 55.7	50 14.0	50 32.2	50 50.5	51 8.8
82	47 28.3	47 47.7	48 7.3	48 27.2	48 47.4	49 7.9	49 28.4	49 49.1	50 9.9	50 30.7	50 51.6	51 12.5
81	47 4.5	47 26.4	47 48.5	48 10.9	48 33.8	48 56.7	49 20.0	49 43.3	50 6.7	50 30.2	50 53.7	51 17.1
80	46 41.5	47 6.1	47 30.5	47 55.5	48 21.0	48 46.6	49 12.5	49 38.4	50 4.4	50 30.4	50 56.5	51 22.4
79	46 19.3	46 46.2	47 13.5	47 41.2	48 9.0	48 37.3	49 5.9	49 34.3	50 3.0	50 31.6	51 0.1	51 28.7
78	45 58.0	46 27.5	46 57.3	47 27.7	47 58.2	48 29.1	49 0.1	49 31.2	50 2.4	50 33.6	51 4.7	51 35.8
77	45 37.6	46 9.6	46 42.2	47 15.0	47 48.2	48 21.7	48 55.3	49 28.9	50 2.7	50 36.4	51 10.0	51 43.6
76	45 18.0	45 52.8	46 27.9	47 3.4	47 39.1	48 15.1	48 51.4	49 27.6	50 3.9	50 40.1	51 16.2	51 52.2
75	44 59.4	45 36.8	46 14.5	46 52.6	47 31.0	48 9.6	48 48.3	49 27.1	50 5.9	50 44.7	51 23.3	52 1.8
74	44 41.8	45 21.8	46 2.0	46 42.9	47 23.8	48 4.9	48 46.2	49 27.6	50 8.9	50 50.1	51 31.1	52 11.9
73	44 25.1	45 7.7	45 50.5	46 33.9	47 17.5	48 1.1	48 45.0	49 28.9	50 12.7	50 56.4	51 39.8	52 23.1
72	44 9.5	44 54.7	45 40.2	46 26.0	47 12.2	47 58.3	48 44.7	49 31.2	50 17.4	51 3.5	51 49.3	52 34.8
71	43 44.8	44 42.6	45 30.7	46 19.2	47 7.9	47 56.6	48 45.4	49 34.2	50 22.9	51 11.4	51 59.6	52 47.4
70	43 41.2	44 31.5	45 22.3	46 13.2	47 4.4	47 55.6	48 47.0	49 38.2	50 29.3	51 20.1	52 10.6	53 0.8
69	43 28.8	44 21.5	45 14.8	46 8.3	47 2.0	47 55.6	48 49.5	49 43.1	50 36.5	51 29.7	52 22.5	53 14.9
68	43 17.1	44 12.6	45 8.3	46 4.5	47 0.5	47 56.7	48 52.9	49 48.9	50 44.6	51 40.1	52 35.1	53 29.8
67	43 6.7	44 4.7	45 3.0	46 1.5	47 0.0	47 58.7	48 57.2	49 55.5	50 53.6	51 51.3	52 48.5	53 45.3
66	42 57.3	43 58.0	44 58.5	45 59.4	47 0.6	48 1.6	49 2.4	50 3.1	51 3.3	52 33.3	53 2.7	54 1.6
65	42 49.0	43 52.2	44 55.3	45 58.7	47 2.1	48 5.4	49 8.5	50 11.4	51 20.3	52 16.0	53 17.7	54 18.6
64	42 42.0	43 47.4	44 53.0	45 58.9	47 4.6	48 10.1	49 15.6	50 20.7	51 25.3	52 29.6	53 33.2	54 36.3
63	42 35.9	43 43.8	44 51.9	46 0.0	47 8.1	48 15.9	49 23.5	50 30.7	51 37.6	52 43.2	53 50.1	54 54.6
62	42 31.0	43 42.2	44 51.7	46 2.2	47 12.4	48 22.5	49 32.3	50 41.6	51 50.5	52 58.9	54 6.7	55 13.6
61	42 27.2	43 39.9	44 52.6	46 5.3	47 17.9	48 30.0	49 42.0	50 53.3	52 4.3	53 14.7	54 24.3	55 33.3
60	42 24.6	43 39.5	44 54.6	46 9.5	47 24.2	48 38.5	49 52.5	51 5.9	52 18.9	53 31.2	54 42.8	55 53.6
59	42 23.1	43 40.6	44 57.5	46 14.5	47 31.3	48 47.8	50 3.7	51 19.3	52 34.2	53 48.4	55 1.8	56 14.6
58	42 22.8	43 42.4	45 1.5	46 20.8	47 39.6	48 58.0	50 16.0	51 33.4	52 50.0	54 6.3	55 21.5	56 36.0
57	42 23.6	43 45.3	45 6.7	46 27.9	47 48.7	49 9.1	50 29.0	51 48.4	53 7.0	54 24.9	55 42.0	56 58.3
56	42 25.5	43 49.3	45 12.8	46 36.0	47 58.8	49 21.1	50 42.9	52 4.1	53 24.5	54 44.2	56 3.0	57 21.0
55	42 28.7	43 54.4	45 19.9	46 45.1	48 9.8	49 33.9	50 57.6	52 20.5	53 42.7	55 4.1	56 24.6	57 44.3
54	42 32.9	44 0.7	45 28.1	46 55.1	48 21.7	49 47.7	51 13.0	52 37.8	54 1.6	55 24.7	56 46.8	58 8.1
53	42 38.3	44 8.0	45 37.2	47 6.1	48 34.4	50 2.2	51 29.3	52 55.7	54 21.2	55 45.9	57 9.7	58 32.5
52	42 44.8	44 16.3	45 47.4	47 18.1	48 48.1	50 17.6	51 46.3	53 14.4	54 41.5	56 7.7	57 33.1	58 57.4
51	42 52.4	44 25.8	45 58.5	47 30.9	49 2.6	50 33.7	52 4.1	53 33.7	55 2.4	56 30.2	57 57.0	59 22.9
50	43 1.1	44 36.2	46 10.7	47 44.7	49 18.0	50 50.7	52 22.6	53 53.8	55 23.9	56 53.4	58 21.6	59 48.9
49	43 10.9	44 47.8	46 23.8	47 59.4	49 34.3	51 8.4	52 41.8	54 14.4	55 46.1	57 16.8	58 46.6	60 15.3
48	43 21.8	45 0.2	46 37.8	48 14.9	49 51.3	51 26.9	53 1.8	54 35.8	56 9.0	57 41.1	59 12.2	60 42.3
47	43 33.8	45 13.7	46 52.8	48 31.4	50 9.1	51 46.1	53 22.5	54 57.8	56 32.3	58 5.8	59 38.3	61 9.7
46	43 46.9	45 28.1	47 8.6	48 48.6	50 27.8	52 6.2	53 43.8	55 20.5	56 56.3	58 31.1	60 4.8	61 37.5
45	44 0.9	45 43.5	47 25.4	49 6.7	50 47.2	52 26.9	54 5.8	55 43.8	57 20.9	58 56.9	60 31.9	62 5.8
44	44 16.0	45 59.9	47 43.1	49 25.6	51 7.4	52 48.4	54 28.5	56 7.7	57 45.9	59 23.3	60 59.4	62 34.5
43	44 32.1	46 17.3	48 1.6	49 45.4	51 28.4	53 10.5	54 51.8	56 32.2	58 11.6	59 50.0	61 27.4	63 3.7
42	44 49.2	46 35.5	48 21.0	50 5.9	51 50.0	53 33.2	55 15.7	56 57.2	58 37.8	60 17.4	61 55.8	63 33.2
41	45 7.2	46 54.5	48 41.2	50 27.1	52 12.3	53 56.7	55 40.2	57 22.8	59 4.5	60 45.1	62 24.7	64 3.2
40	45 26.2	47 14.8	49 2.2	50 49.5	52 35.4	54 21.0	56 5.3	57 49.0	59 31.7	61 13.6	62 53.9	64 33.8
39	45 46.2	47 35.5	49 24.3	51 12.2	53 5.3	54 45.8	56 31.2	58 15.6	59 59.8	61 42.2	63 24.1	65 4.5
38	46 7.0	47 57.1	49 47.0	51 35.7	53 23.8	55 10.9	56 57.4	58 42.9	60 27.9	62 11.3	63 54.2	65 35.7
37	46 28.7	48 19.7	50 10.3	51 59.9	53 48.8	55 37.0	57 24.2	59 10.4	60 56.5	62 40.8	64 24.7	66 6.9
36	46 51.1	48 42.9	50 34.4	52 24.8	54 14.5	56 3.5	57 51.5	59 38.8	61 25.6	63 10.8	64 55.5	66 38.6
35	47 14.6	49 7.0	50 59.2	52 50.4	54 40.8	56 30.7	58 19.4	60 7.5	61 55.2	63 41.1	65 24.1	67 10.8
34	47 38.8	49 31.8	51 24.7	53 16.0	55 7.7	56 58.2	58 47.8	60 36.8	62 25.0	64 11.8	65 58.2	67 43.1
33	48 3.8	49 57.5	51 50.9	53 43.4	55 35.2	57 26.2	59 16.6	61 6.2	62 55.2	64 42.9	66 30.1	68 15.8
32	48 29.5	50 23.7	52 17.8	54 10.8	56 3.2	57 55.1	59 46.0	61 36.2	63 26.0	65 14.4	67 2.3	68 48.8
31	48 56.1	50 50.7	52 45.3	54 38.8	56 31.8	58 24.2	60 16.0	62 6.6	63 57.2	65 46.2	67 34.8	69 22.1
30	49 23.3	51 18.3	53 13.4	55 7.4	57 0.9	58 53.8	60 46.0	62 37.5	64 28.7	66 18.3	68 7.6	69 55.6
29	49 51.3	51 46.7	53 42.1	55 36.6	57 30.6	59 23.9	61 16.7	63 8.7	65 0.5	66 50.8	68 40.7	70 29.0
28	50 19.9	52 15.6	54 11.4	56 6.3	58 0.6	59 54.3	61 47.8	63 40.4	65 32.7	67 23.4	69 14.2	71 2.9
27	50 49.3	52 45.2	54 41.3	56 36.5	58 31.3	60 25.4	62 19.1	64 12.4	66 5.2	67 56.6	69 47.8	71 35.9
26	51 19.1	53 15.4	55 11.8	57 7.3	59 2.4	60 57.0	62 51.1	64 44.8	66 38.2	68 30.1	70 21.2	72 11.8
+ 25	51 49.8	53 46.1	55 42.2	57 38.5	59 33.9	61 28.9	63 23.4	65 17.4	67 11.2	69 3.4	70 55.9	72 46.9

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Declination.	VI hours.						VII hours.					
	0m.	10m.	20m.	30m.	40m.	50m.	0m.	10m.	20m.	30m.	40m.	50m.
°	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
+ 90	51 6.3	51 6.3	51 6.3	51 6.3	51 6.3	51 6.3	51 6.3	51 6.3	51 6.3	51 6.3	51 6.3	51 6.3
89	51 6.8	51 9.4	51 12.0	51 14.5	51 17.1	51 19.8	51 22.3	51 24.8	51 27.2	51 29.7	51 32.0	51 34.4
88	51 8.0	51 13.3	51 18.5	51 23.6	51 28.7	51 33.9	51 39.0	51 44.0	51 48.8	51 53.3	51 58.4	52 3.1
87	51 10.2	51 18.1	51 25.8	51 33.3	51 41.1	51 48.9	51 56.4	52 3.9	52 11.2	52 18.4	52 25.4	52 34.4
86	51 13.1	51 23.6	51 33.9	51 44.1	51 54.3	52 4.6	52 14.6	52 24.4	52 34.2	52 43.8	52 47.1	53 2.4
85	51 17.0	51 29.6	51 42.9	51 55.5	52 8.3	52 21.1	52 33.5	52 45.8	52 58.0	53 9.8	53 21.4	53 32.8
84	51 21.5	51 37.2	51 52.6	52 7.8	52 23.1	52 38.3	52 53.2	53 7.9	53 22.3	53 36.5	53 44.5	54 3.8
83	51 27.0	51 45.2	52 3.2	52 20.8	52 38.6	52 56.3	53 13.6	53 30.6	53 47.4	54 3.8	54 19.8	54 35.6
82	51 33.2	51 54.1	52 14.4	52 34.7	52 54.8	53 15.0	53 34.6	53 54.0	54 13.0	54 31.7	54 49.8	55 7.6
81	51 40.4	52 3.7	52 26.6	52 49.2	53 11.8	53 34.4	53 56.4	54 18.0	54 39.3	55 0.1	55 20.4	55 40.3
80	51 48.3	52 14.1	52 39.5	53 4.7	53 29.5	53 54.4	54 18.8	54 42.7	55 6.2	55 29.1	55 51.6	56 13.5
79	51 57.0	52 25.3	52 53.1	53 20.8	53 47.9	54 15.2	54 41.8	55 7.9	55 33.5	55 58.7	56 23.2	56 47.1
78	52 6.6	52 37.3	53 7.6	53 37.6	54 7.1	54 36.5	55 5.5	55 33.7	56 1.6	56 28.7	56 55.3	57 21.3
77	52 16.9	52 50.1	53 22.7	53 55.1	54 26.8	54 58.7	55 29.7	56 0.2	56 30.1	56 59.4	56 59.4	57 55.8
76	52 28.0	53 3.6	53 38.6	54 13.3	54 47.3	55 21.3	55 54.6	56 27.2	56 59.2	57 30.5	57 30.5	58 30.9
75	52 39.9	53 17.8	53 55.2	54 32.1	55 8.4	55 44.7	56 20.0	56 54.7	57 28.8	58 2.1	58 2.1	59 6.3
74	52 52.5	53 32.8	54 12.4	54 51.7	55 30.1	56 8.6	56 46.0	57 22.8	57 58.9	58 34.1	58 34.1	59 42.0
73	53 5.9	53 48.5	54 30.4	55 11.8	55 52.0	56 33.1	57 12.6	57 51.5	58 29.5	59 6.7	59 6.7	60 18.4
72	53 20.0	54 4.9	54 49.0	55 32.7	56 16.6	56 58.1	57 39.7	58 20.5	59 0.6	59 39.7	59 39.7	60 54.9
71	53 34.9	54 22.1	55 8.3	55 54.1	56 39.0	57 23.7	58 7.4	58 50.1	59 32.0	60 13.1	60 13.1	61 31.9
70	53 50.5	54 39.9	55 28.3	56 16.2	57 3.1	57 49.9	58 35.6	59 20.3	60 4.1	60 46.9	61 28.6	62 9.2
69	54 6.8	54 58.4	55 48.9	56 38.9	57 27.9	58 16.6	59 4.2	59 50.6	60 36.5	61 21.1	62 4.5	62 46.8
68	54 23.8	55 17.6	56 10.1	57 2.2	57 53.1	58 48.6	59 33.3	60 22.3	61 9.3	61 55.6	62 40.9	63 24.8
67	54 41.5	55 37.5	56 31.9	57 26.0	58 18.8	59 11.6	60 2.9	60 53.3	61 42.5	62 30.7	63 17.5	64 3.1
66	54 59.9	55 57.8	56 54.4	57 50.4	58 45.2	59 39.8	60 33.0	61 25.0	62 18.1	63 5.9	63 54.5	64 41.8
65	55 18.9	56 18.8	57 14.4	58 15.4	59 12.0	60 8.5	61 3.5	61 57.3	62 50.1	63 41.6	64 31.8	65 20.7
64	55 38.6	56 40.5	57 41.0	58 40.9	59 39.4	60 37.6	61 34.5	62 30.1	63 24.4	64 17.6	65 9.4	65 59.8
63	55 58.9	57 2.7	58 5.1	59 6.9	60 7.2	61 7.2	62 5.7	63 3.1	63 59.1	64 53.9	65 47.3	66 39.4
62	56 19.9	57 25.5	58 29.8	59 33.4	60 35.5	61 37.3	62 37.5	63 36.5	64 34.1	65 30.5	66 25.4	67 18.9
61	56 41.4	57 48.9	58 55.1	60 0.4	61 4.2	62 7.8	63 9.6	64 10.2	65 9.5	66 7.4	67 3.8	67 58.9
60	57 3.6	58 12.6	59 20.8	60 27.9	61 33.8	62 38.6	63 42.1	64 44.3	65 45.2	66 44.7	67 42.5	68 38.9
59	57 26.3	58 37.2	59 47.0	60 55.8	62 3.5	63 9.8	64 15.0	65 18.7	66 21.2	67 22.1	68 21.5	69 19.9
58	57 49.6	59 2.2	60 13.7	61 24.2	62 33.5	63 41.5	64 48.2	65 53.5	66 57.5	67 59.9	69 0.7	65 59.9
57	58 13.5	59 27.8	60 41.0	61 53.0	63 3.9	64 13.5	65 21.8	66 28.6	67 34.0	68 37.9	69 40.1	70 40.8
56	58 37.9	59 53.8	61 8.7	62 22.3	63 34.7	64 45.9	65 55.6	67 4.0	68 10.8	69 16.0	70 19.8	71 21.8
55	59 2.8	60 20.4	61 36.8	62 51.9	64 5.9	65 18.6	66 29.9	67 39.6	68 47.9	69 54.5	70 59.6	72 2.9
54	59 28.3	60 47.4	62 5.3	63 22.1	64 37.5	65 51.6	67 4.4	68 15.5	69 25.2	70 33.2	71 39.7	72 44.3
53	59 54.2	61 14.9	62 34.3	63 52.5	65 9.5	66 25.0	67 39.2	68 52.4	70 2.8	71 12.1	72 19.9	73 25.9
52	60 20.7	61 42.8	63 3.7	64 23.4	65 41.8	66 58.7	68 14.3	69 28.2	70 40.6	71 51.2	73 0.4	74 7.6
51	60 47.6	62 11.3	63 33.6	64 54.7	66 14.4	67 32.7	68 49.6	70 4.9	71 18.6	72 30.6	73 40.9	74 49.4
50	61 15.0	62 40.0	64 3.8	65 26.2	66 47.4	68 7.0	69 25.2	70 41.8	71 56.9	73 10.2	74 21.7	75 31.4
49	61 42.8	63 9.2	64 34.4	65 58.2	67 20.6	68 41.6	70 1.1	71 19.1	72 35.3	73 49.9	75 2.6	76 13.6
48	62 11.1	63 38.8	65 5.3	66 30.5	67 54.2	69 16.4	70 37.3	71 56.4	73 13.9	74 29.7	75 43.7	76 55.8
47	62 39.8	64 8.9	65 36.6	67 3.0	68 28.0	69 51.5	71 13.6	72 34.0	73 52.8	75 9.8	76 24.9	77 38.2
46	63 9.0	64 39.3	66 8.3	67 35.9	69 2.2	70 26.9	71 50.2	73 11.8	74 31.8	75 49.9	77 6.3	78 20.7
45	63 38.5	65 10.0	66 40.2	68 9.1	69 36.6	71 2.6	72 27.0	73 49.8	75 10.9	76 30.3	77 47.7	79 3.3
44	64 8.4	65 41.1	67 12.5	68 42.1	70 11.2	71 38.4	73 4.0	74 27.9	75 50.2	77 10.7	78 29.3	79 46.0
43	64 38.7	66 12.6	67 45.1	69 16.4	70 46.2	72 14.5	73 41.2	75 6.3	76 29.7	77 51.3	79 11.0	
42	65 9.4	66 44.4	68 18.0	69 50.4	71 21.3	72 50.7	74 18.6	75 44.8	77 9.3	78 32.0	79 52.8	
41	65 40.4	67 16.5	68 51.2	70 24.7	71 56.7	73 27.2	74 56.2	76 23.4	77 49.0	79 12.8	80 34.7	
40	66 11.8	67 49.1	69 24.8	70 59.6	72 32.3	74 3.9	75 33.9	77 2.3	78 28.9	79 53.7		
39	66 43.5	68 21.8	69 58.6	71 34.4	73 8.1	74 40.7	76 11.8	77 41.2	79 8.9	80 34.8		
38	67 15.5	68 54.8	70 32.6	72 9.4	73 44.2	75 17.8	76 49.9	78 20.3	79 49.0			
37	67 47.8	69 28.1	71 6.8	72 44.6	74 20.4	75 55.0	77 28.1	78 59.5	80 29.2			
36	68 20.5	70 1.7	71 41.3	73 20.1	74 56.8	76 32.4						
35	68 53.5	70 35.6	72 16.1	73 55.7	75 33.4	77 9.9						
34	69 26.7	71 9.7	72 51.0	74 31.5	76 10.1	77 47.5						
33	70 0.1	71 44.0	73 26.1	75 7.8	76 47.0	78 25.4						
32	70 33.9	72 18.5	74 1.4	75 43.9	77 24.1	79 3.3						
31	71 7.9	72 53.3	74 37.1	76 20.2	78 1.3	79 41.3						
30	71 42.7	73 28.3	75 12.9	76 56.5	78 38.7	80 19.5						
29	72 16.6	74 3.3	75 48.9	77 33.5	79 16.1							
28	72 51.4	74 38.7	76 24.9	78 10.2	79 53.7							
27	73 26.2	75 14.3	77 1.2	78 47.2	80 31.4							
26	74 1.4	75 50.0	77 37.6	79 24.4								
+ 25	74 36.7	76 26.1	78 14.2	80 1.6								

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Declination.	VIII hours.						IX hours.					
	0m.	10m.	20m.	30m.	40m.	50m.	0m.	10m.	20m.	30m.	40m.	50m.
°	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
+ 90	51 6.3	51 6.3	51 6.3	51 6.3	51 6.3	51 6.3	51 6.3	51 6.3	51 6.3	51 6.3	51 6.3	51 6.3
89	51 36.7	51 38.9	51 41.1	51 43.1	51 45.2	51 47.1	51 48.9	51 50.7	51 52.5	51 54.1	51 55.6	51 57.0
88	52 7.6	52 12.0	52 16.2	52 20.4	52 24.4	52 28.4	52 32.0	52 35.6	52 38.9	52 42.1	52 45.2	52 48.0
87	52 39.1	52 45.7	52 52.0	52 58.2	53 4.2	53 9.9	53 15.5	53 20.7	53 25.7	53 30.5	53 34.9	53 39.2
86	53 11.2	53 19.9	53 28.3	53 36.5	53 44.4	53 52.0	53 59.2	54 6.2	54 12.8	54 19.1	54 25.0	54 30.5
85	53 43.8	53 54.7	54 5.1	54 15.2	54 25.0	54 34.4	54 43.4	54 52.0	55 0.2	55 7.9	55 15.2	55 19.9
84	54 17.0	54 29.8	54 42.3	54 54.3	55 6.0	55 17.2	55 27.8	55 38.0	55 42.4	55 57.6	56 5.2	56 13.9
83	54 50.7	55 5.6	55 20.0	55 33.9	55 47.4	56 0.3	56 12.7	56 23.9	56 35.7	56 46.4	56 56.4	57 5.8
82	55 24.9	55 41.7	55 58.2	56 13.9	56 29.2	56 43.3	56 57.8	57 11.2	57 23.9	57 35.9	57 47.3	57 57.9
81	55 59.7	56 18.4	56 36.7	56 54.2	57 11.3	57 27.5	57 43.2	57 58.1	58 12.2	58 25.7	58 38.4	58 50.2
80	56 34.8	56 55.5	57 15.6	57 34.9	57 53.6	58 11.7	58 28.9	58 45.3	57 0.9	59 15.7	59 29.6	59 42.7
79	57 10.4	57 33.0	57 54.9	58 16.0	58 36.5	58 56.0	59 14.8	59 32.7	59 49.7	60 5.8	60 21.0	60 35.2
78	57 46.5	58 10.9	58 34.6	58 57.5	59 19.6	59 40.7	60 1.0	60 19.9	60 38.7	60 56.2	61 12.2	61 27.9
77	58 22.9	58 49.2	59 14.7	59 39.2	60 2.9	60 25.7	60 47.5	61 8.3	61 27.9	61 46.7	62 4.3	62 20.8
76	58 59.8	59 27.9	59 55.1	60 21.4	60 46.6	61 10.9	61 34.2	61 56.4	62 17.4	62 37.4	62 56.1	63 13.7
75	59 37.0	60 6.9	60 35.8	61 3.7	61 30.6	61 56.4	62 21.0	62 44.6	63 7.0	63 28.2	63 48.0	64 6.8
74	60 14.7	60 46.3	61 16.9	61 46.6	62 14.8	62 42.9	63 8.2	63 33.1	63 56.7	64 19.1	64 40.2	65 0.3
73	60 52.6	61 26.0	61 58.2	62 29.3	62 59.2	63 28.0	63 55.5	64 21.7	64 46.7	65 10.3	65 32.4	65 53.2
72	61 31.0	62 6.0	62 39.8	63 12.5	63 43.9	64 14.1	64 43.0	65 10.6	65 36.7	66 1.5	66 24.5	66 46.6
71	62 9.7	62 46.3	63 21.8	63 55.9	64 28.9	65 0.5	65 30.7	65 59.6	66 26.9	66 52.8	67 17.2	67 40.1
70	62 48.2	63 26.9	64 3.9	64 39.8	65 14.1	65 47.0	66 18.6	66 48.7	67 17.2	67 44.3	68 9.8	68 33.6
69	63 27.9	64 7.8	64 46.4	65 23.6	65 59.4	66 33.8	67 6.6	67 37.9	68 7.7	68 35.9	69 2.6	69 27.3
68	64 7.6	64 49.1	65 29.1	66 7.7	66 44.9	67 20.7	65 54.8	68 27.5	68 58.3	69 27.6	69 55.2	70 21.0
67	64 47.4	65 30.6	66 12.0	66 52.1	67 30.7	68 7.8	68 49.3	69 16.9	69 49.0	70 19.4	70 48.2	71 14.6
66	65 27.6	66 12.1	66 55.1	67 36.6	68 16.6	68 54.9	69 31.7	70 6.6	70 39.9	71 11.3	71 40.9	72 8.7
65	66 8.1	66 54.1	67 38.5	68 21.4	69 2.7	69 42.4	70 20.3	70 56.6	71 30.8	72 3.3	72 33.9	73 2.6
64	66 48.7	67 36.2	68 22.1	69 6.3	69 48.9	70 29.9	71 9.0	71 46.3	72 21.8	72 55.4	73 26.9	73 56.6
63	67 29.7	68 18.6	69 5.8	69 51.5	70 35.4	71 17.5	71 57.9	72 36.4	73 12.9	73 47.5	74 20.1	74 50.7
62	68 10.9	69 1.1	69 49.8	70 36.8	71 21.9	72 5.4	72 46.9	73 26.5	74 4.1	74 39.7	75 13.3	75 44.5
61	68 52.2	69 43.9	70 33.9	71 22.0	72 8.9	72 53.2	73 35.9	74 16.5	74 55.4	75 32.0	76 6.5	76 38.7
60	69 33.7	70 26.8	71 18.2	72 8.0	72 55.5	73 41.3	74 25.2	75 27.7	75 44.7	76 24.6	76 59.8	77 33.1
59	70 15.5	71 9.9	72 2.6	72 53.5	73 42.5	74 29.4	75 14.4	75 57.4	76 38.1	77 16.8	77 53.2	78 27.3
58	70 57.5	71 53.3	72 44.8	73 39.3	74 29.5	75 15.7	76 3.8	76 47.8	77 29.7	78 9.3	78 46.6	79 21.6
57	71 39.6	72 36.8	73 32.0	74 25.3	75 16.7	76 6.0	76 53.2	77 38.4	78 21.2	79 1.7	79 40.0	80 15.9
56	72 22.0	73 20.4	74 16.9	75 11.4	76 40.0	76 54.5	77 42.8	78 28.9	79 12.8	79 54.4	80 33.5	
55	73 4.5	74 4.2	75 1.9	75 57.7	76 51.4	77 43.0	78 32.4	79 19.6	80 4.5	80 47.0		
54	73 47.1	74 48.0	75 47.0	76 44.0	77 38.9	78 31.6	79 22.1	80 10.3				
53	74 29.9	75 32.1	76 32.3	77 30.4	78 26.5	79 20.3	80 11.8					
52	75 12.9	76 16.3	77 17.7	78 16.9	79 14.0	80 9.0						
51	75 55.9	77 0.6	78 3.1	79 3.5	80 1.8							
50	76 39.2	77 44.9	78 48.7	79 50.2								
49	77 22.5	78 29.5	79 34.3	80 37.0								
48	78 5.9	79 13.9	80 20.0									
47	78 49.5	79 58.7										
46	79 33.1	80 43.5										
+ 45	80 16.9											

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Declination.	X hours.						XI hours.					
	0m.	10m.	20m.	30m.	40m.	50m.	0m.	10m.	20m.	30m.	40m.	50m.
°	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
+ 90	51 6.3	51 6.3	51 6.3	51 6.3	51 6.3	51 6.3	51 6.3	51 6.3	51 6.3	51 6.3	51 6.3	51 6.3
89	51 58.4	51 58.3	52 0.8	52 1.2	52 2.2	52 3.6	52 4.3	52 4.9	52 5.5	52 5.8	52 6.1	52 6.3
88	52 50.7	52 51.7	52 55.4	52 57.5	52 59.3	53 0.9	53 2.4	53 3.6	53 4.5	53 5.3	53 5.9	53 6.2
87	53 43.1	53 44.6	53 50.2	53 53.1	53 55.9	53 58.0	54 0.4	54 2.2	54 3.7	54 4.8	54 3.9	54 6.1
86	54 35.8	54 37.7	54 45.0	54 49.0	54 52.6	54 55.3	54 58.6	55 0.9	55 2.8	55 4.4	55 5.5	55 6.1
85	55 28.6	55 30.9	55 39.9	55 44.9	55 49.3	55 53.3	55 56.8	55 59.7	56 2.1	56 3.9	56 5.2	56 6.1
84	56 21.5	56 24.4	56 35.0	56 40.9	56 46.3	56 50.9	56 55.0	56 58.4	57 1.3	57 3.5	57 5.0	57 6.0
83	57 19.7	57 17.9	57 30.3	57 37.0	57 43.1	57 48.5	57 53.2	57 57.2	58 0.4	58 3.0	58 4.9	58 5.9
82	58 7.9	58 11.7	58 25.5	58 33.2	58 40.1	58 46.2	58 51.5	58 56.1	58 59.7	59 2.6	59 4.7	59 5.9
81	59 1.3	59 5.5	59 20.9	59 29.5	59 37.1	59 43.9	59 49.9	59 54.9	59 59.0	60 2.2	60 4.5	60 5.9
80	59 54.8	59 59.4	60 16.5	60 25.8	60 34.2	60 41.7	60 48.2	60 53.8	60 58.2	61 1.8	61 4.3	61 5.8
79	60 48.4	60 53.5	61 12.0	61 22.2	61 31.4	61 39.5	61 46.6	61 52.6	61 57.5	62 1.4	62 4.1	62 5.5
78	61 42.3	61 47.7	62 7.7	62 18.7	62 28.6	62 37.4	62 45.0	62 51.5	62 56.8	63 1.0	63 3.9	63 5.8
77	62 36.2	62 41.9	63 3.4	63 15.2	63 25.9	63 35.3	63 43.0	63 50.3	63 56.1	64 0.6	64 3.8	64 5.7
76	63 30.0	63 36.3	63 59.2	64 11.8	64 23.2	64 33.3	64 42.0	64 49.4	64 55.5	65 0.2	65 3.6	65 5.7
75	64 24.2	64 30.8	64 55.1	65 8.5	65 20.5	65 31.2	65 40.5	65 48.4	65 54.8	65 59.8	66 3.4	66 5.6
74	65 18.3	65 25.3	65 51.0	66 5.2	66 17.7	66 29.2	66 39.0	66 47.3	66 54.1	66 59.5	67 3.3	67 5.6
73	66 12.6	66 19.9	66 47.0	67 1.9	67 15.3	67 27.2	67 37.5	67 46.3	67 53.5	67 59.1	68 3.1	68 5.5
72	67 6.6	67 14.6	67 43.0	67 58.7	68 12.8	68 25.3	68 36.1	68 45.3	68 52.9	68 58.8	69 2.9	69 5.5
71	68 1.3	68 9.5	68 39.2	68 55.6	69 10.3	69 23.4	69 34.7	69 44.3	69 52.2	69 58.4	70 2.8	70 5.4
70	68 55.9	69 4.3	69 35.3	69 52.4	70 7.8	70 21.4	70 33.3	70 43.4	70 51.7	70 58.0	71 2.7	71 5.4
69	69 50.4	69 59.2	70 31.5	70 49.4	71 5.4	71 19.4	71 31.9	71 42.4	71 51.0	71 57.7	72 2.5	72 5.4
68	70 45.0	70 4.2	71 27.8	71 46.3	72 2.9	72 17.7	72 30.6	72 41.5	72 50.4	72 57.4	73 2.3	73 5.3
67	71 39.8	71 49.2	72 24.1	72 43.3	73 0.6	73 15.9	73 29.2	73 40.5	73 49.8	73 57.0	74 2.2	74 5.3
66	72 34.5	72 44.3	73 20.4	73 40.3	73 58.2	74 14.1	74 27.9	74 39.6	74 49.2	74 56.7	75 2.0	75 5.2
65	73 29.3	73 39.5	74 16.8	74 37.4	74 55.9	75 12.3	75 26.6	75 38.7	75 48.6	75 56.4	76 1.9	76 5.2
64	74 24.2	74 34.6	75 13.2	75 34.5	75 53.6	76 10.5	76 25.3	76 37.8	76 48.0	76 56.0	77 1.7	77 5.2
63	75 19.1	75 29.9	76 9.6	76 31.6	76 51.3	77 8.6	77 23.9	77 36.9	77 47.6	77 55.7	78 1.6	78 5.1
62	76 14.0	76 25.1	77 6.1	77 30.5	77 49.0	78 7.0	78 22.7	78 35.9	78 46.8	78 55.4	79 1.5	79 5.1
61	77 9.0	77 20.5	78 2.5	78 25.8	78 46.7	79 5.3	79 21.4	79 35.9	79 46.3	79 55.0	80 1.3	80 5.1
+ 60	78 40.0	78 15.8	78 59.1	79 23.0	79 44.5	80 3.6	80 20.1	80 34.2	80 45.7	80 54.7		

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Declination.	0 hour.						I hour.					
	0m.	10m.	20m.	30m.	40m.	50m.	0m.	10m.	20m.	30m.	40m.	50m.
°	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
+ 24	14 53.7	15 2.4	15 29.2	16 11.8	17 8.2	18 16.6	19 34.8	21 0.7	22 33.2	24 11.1	25 52.3	27 36.9
23	15 53.7	16 3.7	16 27.2	17 8.6	18 1.8	19 7.9	20 23.4	21 51.3	23 17.0	24 53.0	26 32.4	28 15.6
22	16 53.7	17 2.5	17 25.4	18 5.2	18 57.7	19 43.6	21 12.6	22 34.2	24 2.1	25 35.7	27 13.9	28 55.8
21	17 53.7	18 2.0	18 24.7	19 2.0	19 51.6	20 53.0	22 3.8	23 22.3	24 47.9	26 19.6	27 56.1	29 36.4
20	18 53.7	18 59.8	19 23.0	19 59.5	20 46.4	21 46.1	22 57.0	24 11.4	25 34.7	27 3.8	28 38.8	30 17.7
19	19 53.7	19 59.7	20 21.8	20 57.8	21 42.5	22 39.8	23 46.0	25 1.3	26 22.9	27 50.0	29 23.3	31 0.0
18	20 53.7	20 59.6	21 20.5	21 56.0	22 38.6	23 33.8	24 37.8	25 51.3	27 11.4	28 36.7	30 8.3	31 43.0
17	21 53.7	21 59.5	22 19.3	22 54.2	23 34.8	24 27.8	25 29.9	26 41.5	28 0.5	29 23.9	30 53.8	32 26.7
16	22 53.7	22 59.4	23 18.0	23 52.4	24 31.0	25 22.0	26 24.0	27 32.1	28 49.4	30 11.6	31 40.0	33 12.1
15	23 53.7	23 59.3	24 17.4	24 50.3	25 28.0	26 17.4	27 17.7	28 23.4	29 39.2	31 0.4	32 27.4	33 58.2
14	24 53.7	24 59.2	25 16 7	25 48.1	26 25.0	27 13.4	28 11.8	29 16.1	30 30.5	31 49.7	33 15.2	34 44.6
13	25 53.7	25 59.1	26 16.0	26 46.0	27 22.0	28 9.6	29 6.2	30 10.2	31 22.0	32 39.5	34 3.5	35 31.2
12	26 53.7	26 59.0	27 15.4	27 44.3	28 19.5	28 6.0	30 1.0	31 4.4	32 13.7	33 29.7	34 52.3	36 18.6
11	27 53.7	27 58.9	28 14.7	28 42.5	29 17.1	29 2.5	30 56.1	31 59.2	33 5.4	34 20.5	35 41.5	37 6.6
10	28 53.7	28 58.8	29 14.0	29 40.8	30 14.7	30 59.3	31 51.4	32 51.2	33 57.3	35 11.7	36 31.0	37 55.1
9	29 53.7	29 58.7	30 13.6	30 39.4	31 12.6	31 56.2	32 47.0	33 45.4	34 50.7	36 3.3	37 21.0	38 44.2
8	30 53.7	30 58.6	31 13.2	31 38.0	32 10.6	32 53.1	33 42.8	34 40.2	35 44.2	36 55.4	38 11.6	39 43.5
7	31 53.7	31 58.5	32 12.8	32 36.6	33 8.6	33 50.0	34 38.8	35 35.3	36 38.2	37 48.0	39 2.8	40 23.1
6	32 53.7	32 58.4	33 12.3	33 35.6	34 6.9	34 47.3	35 34.9	36 30.1	37 32.0	38 30.8	39 54.0	41 13.2
5	33 53.7	33 58.3	34 11.8	34 34.5	35 5.2	35 44.8	36 31.3	37 25.3	38 26.0	39 33.7	40 45.7	42 3.7
4	34 53.7	34 58.2	35 11.4	35 33.4	36 3.5	36 42.1	37 27.8	38 20.9	39 20.4	40 26.6	41 37.8	42 54.6
3	35 53.7	35 58.1	36 11.0	36 32.4	37 2.0	37 39.7	38 24.5	39 16.7	40 14.7	41 19.9	42 29.8	43 45.7
2	36 53.7	36 58.0	37 10.6	37 31.5	38 0.5	38 37.5	39 21.3	40 12.6	41 9.5	42 13.6	43 22.3	44 37.4
+ 1	37 53.7	37 57.9	38 10.2	38 30.6	38 58.9	39 35.1	40 18.2	41 8.5	42 4.8	43 7.6	44 15.5	45 29.7
0	38 53.7	38 57.8	39 9.9	39 29.9	39 57.6	40 33.0	41 15.2	42 4.5	43 0.1	44 2.3	45 8.3	46 20.7
— 1	39 53.7	39 57.7	40 9.6	40 29.2	40 56.3	41 32.1	42 12.3	43 0.6	43 55.5	44 57.0	46 2.6	47 13.4
2	40 53.7	40 57.6	41 9.3	41 28.5	41 55.0	42 30.6	43 9.5	43 56.2	44 51.1	45 51.7	46 55.1	48 5.2
3	41 53.7	41 57.6	42 8.9	42 27.9	42 53.8	43 29.3	44 6.3	44 53.5	45 46.4	46 46.6	47 48.8	49 7.8
4	42 53.7	42 57.5	43 8.6	43 27.2	43 52.7	44 27.5	45 3.9	45 50.2	46 42.0	47 41.3	48 42.6	49 50.6
5	43 53.7	43 57.4	44 8.3	44 26.5	44 51.7	45 25.7	46 1.8	46 47.0	47 38.0	48 36.0	49 36.3	50 43.5
6	44 53.7	44 57.3	45 8.0	45 26.0	45 50.6	46 24.1	46 59.9	47 44.1	48 34.0	49 30.7	50 30.2	51 36.8
7	45 53.7	45 57.3	46 7.7	46 25.3	46 50.5	47 21.9	47 57.7	48 41.0	49 30.1	50 25.6	51 24.2	52 35.1
8	46 53.7	46 57.2	47 7.6	47 24.6	47 49.4	48 19.7	48 55.5	49 38.0	50 26.4	51 20.7	52 19.7	53 28.4
9	47 53.7	47 57.1	48 7.2	48 24.1	48 47.4	49 17.4	49 53.2	50 35.2	51 22.9	52 16.9	53 14.9	54 22.5
10	48 53.7	48 57.2	49 7.2	49 23.6	49 46.5	50 15.6	50 51.1	51 32.0	52 18.9	53 11.1	54 9.1	55 11.2
11	49 53.7	49 56.7	50 7.0	50 23.2	50 45.6	51 14.6	51 49.1	52 29.5	53 15.6	54 7.1	55 5.2	56 5.3
12	50 53.7	50 56.6	51 6.8	51 22.9	51 44.8	52 13.7	52 47.1	53 27.0	54 12.3	55 3.2	56 1.4	56 59.5
13	51 53.7	51 56.6	52 6.7	52 22.3	52 43.7	53 12.7	53 45.1	54 24.5	55 9.1	55 59.2	56 54.1	57 53.7
14	52 53.7	52 56.7	53 6.5	53 21.8	53 42.9	54 11.0	54 43.3	55 22.2	56 6.0	56 55.3	57 49.5	58 47.9
15	53 53.7	53 56.9	54 6.3	54 21.3	54 42.1	55 9.3	55 41.5	56 17.9	57 2.9	57 51.5	58 44.9	59 42.1
16	54 53.7	54 56.8	55 6.0	55 20.7	55 41.2	56 7.8	56 39.9	57 17.6	57 59.8	58 47.7	59 40.3	60 36.4
17	55 53.7	55 56.7	56 5.7	56 20.2	56 40.4	57 6.6	57 38.3	58 15.3	58 56.9	59 44.1	60 35.9	61 31.5
18	56 53.7	56 56.8	57 5.4	57 19.7	57 39.6	58 5.5	58 36.8	59 13.0	59 54.0	60 40.5	61 31.5	62 26.6
19	57 53.7	57 56.7	58 5.1	58 19.2	58 38.8	59 4.3	59 35.2	60 10.7	60 52.1	61 36.9	62 27.2	63 21.1
20	58 53.7	58 56.7	59 4.9	59 18.9	59 38.1	60 3.2	60 33.8	61 8.3	61 48.2	62 33.3	63 22.8	64 16.7
21	59 53.7	59 56.4	60 4.7	60 18.3	60 37.3	61 1.8	61 32.2	62 5.8	62 45.4	63 29.4	64 18.6	65 11.9
22	60 53.7	60 56.4	61 4.5	61 17.9	61 36.6	62 0.5	62 30.7	63 3.8	63 42.6	64 26.1	65 14.5	66 6.9
23	61 53.7	61 56.3	62 4.5	62 17.5	62 36.0	62 59.8	63 29.1	64 1.8	64 40.0	65 22.9	66 10.4	67 2.1
24	62 53.7	62 56.3	63 4.1	63 17.1	63 35.2	63 58.4	64 26.6	64 59.6	65 37.1	66 19.7	67 6.4	67 57.4
25	63 53.7	63 56.2	64 3.9	64 16.8	64 34.5	64 57.6	65 25.2	65 57.5	66 34.8	67 16.3	68 2.5	68 52.8
26	64 53.7	64 56.2	65 3.8	65 16.3	65 33.9	65 56.3	66 23.8	66 55.6	67 32.1	68 13.1	68 58.7	69 48.1
27	65 53.7	65 56.2	66 3.6	66 15.9	66 33.3	66 55.3	67 22.1	67 53.5	68 29.7	69 10.0	69 54.8	70 43.5
28	66 53.7	66 56.1	67 3.4	67 15.6	67 32.8	67 54.3	68 20.8	68 51.7	69 27.1	70 6.9	70 51.0	71 39.1
29	67 53.7	67 56.1	68 3.2	68 15.2	68 31.9	68 53.3	69 19.6	69 49.5	70 23.7	71 3.9	71 47.2	72 34.8
30	68 53 7	68 56.0	69 3.1	69 14.9	69 31.3	69 52.4	70 17.9	70 47.9	71 22.3	72 0.8	72 43.7	73 30.3
31	69 53.7	69 56.0	70 2.9	70 14.5	70 30.7	70 51.4	71 16.6	71 46.1	72 19.9	72 57.9	73 39.9	74 25.9
32	70 53.7	70 55.9	71 2.8	71 14.1	71 30.1	71 50.4	72 15.2	72 44.2	73 17.5	73 54.9	74 36.3	75 21.6
33	71 53.7	71 55.9	72 2.6	72 13.8	72 29.4	72 49.5	73 13.9	73 42.4	74 15.1	74 51.9	75 32.7	76 17.4
34	72 53 7	72 55.9	73 2.5	73 13.5	73 28.9	73 48.6	74 12.5	74 40.6	75 12.8	75 49.0	76 29.2	77 13.1
35	73 53.7	73 55.9	74 2.3	74 13.1	74 28.3	74 47.5	75 11.2	75 38.8	76 10.5	76 46.1	77 25.6	78 8.9
36	74 53.7	74 55.8	75 2.2	75 12.6	75 27.7	75 46.7	76 9.9	76 37.0	77 8.2	77 43.3	78 22.2	79 4.7
37	75 53.7	75 55.8	76 2.0	76 12.4	76 27.1	76 45.8	77 8.6	77 35.2	78 5.9	78 40.4	79 18.7	80 0.6
38	76 53.7	76 55.7	77 1.9	77 12.1	77 26.5	77 44.9	78 7.3	78 33.5	79 3.4	79 37.6	80 15.2	
39	77 53.7	77 55.7	78 1.7	78 11.8	78 25.8	78 44.0	79 6.0	79 31.8	80 1.4	80 34.8		
40	78 53.7	78 55.7	79 1.5	79 11.4	79 25.4	79 43.1	80 4.7	80 30.1				
41	79 53.7	79 55.7	80 1.4	80 11.2	80 24.8	80 42.2						
— 42	80 53.7											

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Declination.	II hours.						III hours.					
	0m.	10m.	20m.	30m.	40m.	50m.	0m.	10m.	20m.	30m.	40m.	50m.
°	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
+ 24	29 24.4	31 13.9	33 5.4	34 57.9	36 51.9	38 46.9	40 41.8	42 37.6	44 34.0	46 30.8	48 27.8	50 24.6
23	30 1.6	31 50.2	33 40.4	35 32.4	37 25.5	39 19.7	41 14.6	43 5.1	45 6.3	47 2.7	48 59.5	50 56.2
22	30 40.4	32 27.3	34 16.4	36 7.8	38 0.1	39 54.4	41 47.8	43 43.5	45 39.3	47 35.1	49 31.9	51 28.3
21	31 19.1	33 5.8	34 53.6	36 43.9	38 35.5	40 27.8	42 22.4	44 19.8	46 12.8	48 8.4	50 5.1	52 2.1
20	31 59.5	33 44.2	35 31.7	37 20.7	39 11.6	41 3.7	42 57.0	44 51.6	46 46.5	48 42.2	50 38.2	52 34.8
19	32 40.6	34 24.8	36 11.2	37 58.9	39 48.9	41 40.7	43 32.7	45 27.5	47 21.4	49 16.8	51 12.0	53 8.6
18	33 22.7	35 5.9	36 51.0	38 37.6	40 26.7	42 18.2	44 9.2	46 3.7	47 56.9	50 12.0	51 46.6	53 43.0
17	34 5.5	35 47.4	37 31.1	39 16.8	41 5.2	42 56.2	44 46.3	46 40.3	48 33.0	50 47.7	52 22.1	54 18.0
16	34 49.1	36 29.5	38 11.4	39 56.6	41 44.2	43 34.3	45 24.2	47 16.6	49 9.5	51 3.8	52 58.4	54 53.9
15	35 33.2	37 12.5	38 53.5	40 37.7	42 24.4	44 13.7	46 2.7	47 55.1	49 46.7	51 40.2	53 34.8	55 30.0
14	36 18.1	37 55.7	39 46.0	41 19.1	43 5.1	44 53.5	46 41.6	48 33.7	50 24.5	52 17.3	54 11.6	56 6.7
13	37 3.5	38 39.3	40 19.0	42 0.9	43 46.7	45 33.8	47 24.1	49 12.8	51 4.8	52 51.9	54 48.9	56 43.4
12	37 49.6	39 24.4	41 2.8	42 43.3	44 28.3	46 15.0	48 1.2	49 51.1	51 41.5	53 29.8	55 26.6	57 20.1
11	38 36.3	40 10.1	41 47.2	43 26.2	45 10.0	46 55.7	48 41.8	50 29.4	52 20.8	54 8.9	56 4.8	57 57.1
10	39 23.5	40 56.4	42 32.0	44 10.7	45 52.9	47 38.9	49 22.9	51 7.9	53 0.4	54 49.3	56 43.5	58 34.6
9	40 11.3	41 43.2	43 17.1	44 54.5	46 36.2	48 21.6	50 4.5	51 47.0	53 40.4	55 29.7	57 22.4	59 13.1
8	40 59.4	42 20.3	44 2.7	45 39.1	47 19.7	49 4.7	50 46.5	52 31.1	54 21.0	56 10.3	58 1.8	59 52.8
7	41 47.7	43 17.8	44 49.2	46 25.9	48 4.5	49 48.5	51 28.9	53 15.1	55 2.1	56 51.1	58 41.7	60 33.3
6	42 36.5	44 5.1	45 35.7	47 11.6	48 49.1	50 31.5	52 11.9	53 57.2	55 43.5	57 31.6	59 21.7	61 13.3
5	43 25.6	44 52.8	46 22.7	47 57.4	49 33.9	51 14.8	52 55.2	54 39.3	56 25.3	58 12.7	60 2.1	61 53.3
4	44 15.6	45 41.2	47 10.3	48 43.2	50 18.9	51 59.6	53 38.7	55 22.3	57 7.2	58 54.4	60 43.0	62 33.4
3	45 6.5	46 30.2	47 58.0	49 29.9	51 4.6	52 43.6	54 22.7	56 5.4	57 49.4	59 36.2	61 24.0	63 13.6
2	45 56.7	47 19.4	48 46.1	50 17.1	51 50.8	53 28.2	55 6.9	56 48.9	58 32.1	60 18.2	62 5.5	63 54.8
+ 1	46 46.4	48 8.9	49 34.7	51 4.6	52 37.3	54 13.4	55 51.5	57 32.5	59 15.4	61 0.5	62 47.2	64 35.5
0	47 37.3	48 58.3	50 23.4	51 52.1	53 24.0	54 58.9	56 36.6	58 16.7	59 58.9	61 43.1	63 29.2	65 16.8
— 1	48 28.4	49 48.4	51 12.2	52 40.2	54 11.1	55 45.1	57 21.8	59 1.0	60 42.5	62 26.0	64 11.4	65 58.4
2	49 19.7	50 38.8	52 1.8	53 28.5	54 58.5	56 31.5	58 7.4	59 45.8	61 26.4	63 9.2	64 53.9	66 40.2
3	50 11.4	51 29.4	52 51.4	54 17.1	55 46.1	57 18.2	58 53.2	60 30.8	62 10.6	63 52.7	65 36.6	67 22.3
4	51 3.1	52 20.2	53 41.2	55 5.9	56 34.0	58 5.2	59 39.3	61 16.0	62 55.0	64 36.4	66 19.6	68 4.6
5	51 55.2	53 11.2	54 31.3	55 55.0	57 22.1	58 52.5	60 25.6	62 1.4	63 39.8	65 20.3	67 2.8	68 47.1
6	52 47.5	54 2.5	55 21.6	56 44.4	58 10.5	59 40.0	61 12.2	62 47.2	64 24.7	66 4.4	67 46.2	69 29.8
7	53 40.0	54 54.5	56 12.1	57 33.9	58 59.8	60 27.6	61 59.0	63 33.1	65 9.8	66 48.7	68 29.7	70 12.7
8	54 32.6	55 45.6	57 2.8	58 23.7	59 48.0	61 15.5	62 46.0	64 19.3	65 55.1	67 33.3	69 13.5	70 55.8
9	55 25.4	56 37.4	57 55.7	59 13.6	60 37.0	62 3.7	63 33.3	65 5.7	66 40.6	68 18.0	69 57.5	71 39.0
10	56 18.3	57 29.3	58 44.8	60 4.7	61 26.1	62 51.6	64 20.7	65 52.7	67 26.4	69 1.8	70 41.6	72 22.4
11	57 11.5	58 21.6	59 36.2	60 54.8	62 15.7	63 40.2	65 8.4	66 39.2	68 12.5	69 47.3	71 25.8	73 6.1
12	58 4.7	59 13.9	60 27.6	61 44.9	63 5.3	64 28.8	65 56.2	67 25.7	68 58.6	70 32.8	72 10.0	73 49.8
13	58 58.0	60 6.2	61 19.0	62 35.1	63 55.0	65 17.4	66 44.0	68 12.4	69 44.6	71 18.3	72 54.2	74 33.9
14	59 51.7	60 59.0	62 10.8	63 26.0	64 45.0	66 6.7	67 32.2	68 58.2	70 31.1	72 4.1	73 39.1	75 17.5
15	60 45.5	61 51.7	63 2.6	64 16.9	65 35.1	66 55.3	68 20.4	69 44.0	71 17.6	72 49.9	74 24.0	76 1.8
16	61 39.0	62 44.5	63 54.4	65 7.8	66 25.1	67 45.3	69 8.7	70 29.8	72 4.2	73 35.9	75 9.1	76 46.0
17	62 33.0	63 37.7	64 46.7	65 59.5	67 15.6	68 34.9	69 57.5	71 18.9	72 51.0	74 24.9	75 54.5	77 30.4
18	63 27.1	64 30.9	65 39.1	66 51.3	68 6.1	69 24.5	70 46.3	72 8.0	73 37.8	75 7.9	76 40.0	78 14.8
19	64 21.0	65 24.1	66 31.4	67 43.0	68 56.6	70 14.1	71 35.2	72 57.1	74 24.7	75 53.9	77 25.4	78 59.4
20	65 15.1	66 17.3	67 23.8	68 34.7	69 47.2	71 4.1	72 23.9	73 46.4	75 11.7	76 39.9	78 10.9	79 43.9
21	66 9.3	67 10.9	68 16.5	69 25.5	70 38.0	71 54.1	73 13.0	74 35.5	76 0.2	77 27.1	78 56.6	80 28.8
22	67 3.7	68 4.5	69 9.0	70 17.2	71 28.9	72 44.0	74 2.2	75 23.7	76 39.7	78 13.6	79 42.5	81 13.0
23	67 58.1	68 58.0	70 1.8	71 9.1	72 19.9	73 34.0	74 51.4	76 10.4	77 27.1	79 0.5	80 28.1	81 58.0
24	68 52.9	69 51.6	70 54.6	72 1.1	73 11.1	74 24.6	75 40.7	77 0.3	78 14.7	79 46.8	81 14.0	82 44.1
25	69 47.2	70 45.2	71 47.6	72 53.2	74 2.2	75 15.0	76 30.1	77 49.0	79 2.3	80 33.7	82 0.0	
26	70 41.9	71 36.6	72 40.5	73 45.2	74 53.7	76 5.4	77 19.7	78 37.6	79 50.0			
27	71 36.5	72 33.3	73 33.6	74 37.6	75 44.9	76 55.9	78 9.2	79 26.3				
28	72 31.2	73 27.0	74 26.8	75 29.9	76 36.4	77 46.5	78 58.9					
29	73 26.1	74 21.1	75 20.0	76 22.2	77 27.8	78 36.6	79 48.5					
30	74 20.9	75 12.2	76 13.2	77 14.6	78 19.4	79 27.3						
31	75 15.8	76 9.4	77 6.5	78 7.1	79 10.9							
32	76 10.8	77 3.5	77 59.9	78 59.6								
33	77 5.8	77 57.8	78 53.3	79 52.3								
34	78 0.8	78 52.0	79 46.7									
35	78 55.9	79 46.3										
— 36	79 50.9											

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Declination.	IV hours.						V hours.					
	0m.	10m.	20m.	30m.	40m.	50m.	0m.	10m.	20m.	30m.	40m.	50m.
°	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
+ 24	52 20.9	54 17.4	56 13.7	58 10.2	60 5.6	62 1.3	63 56.0	65 50.5	67 44.8	69 37.6	71 30.5	73 21.9
23	52 52.7	54 49.3	56 45.6	58 42.4	60 37.9	62 34.1	64 28.9	66 23.9	68 18.5	70 11.8	72 5.0	73 57.1
22	53 25.7	55 21.6	57 18.7	59 15.1	61 11.2	63 7.2	65 2.6	66 57.6	68 52.6	70 46.3	72 39.8	74 32.4
21	53 58.1	55 54.2	57 51.6	59 48.2	61 44.5	63 40.6	65 36.3	67 31.6	69 26.9	71 21.0	73 15.1	75 7.9
20	54 31.2	56 27.8	58 24.6	60 20.2	62 17.9	64 14.5	66 10.1	68 5.7	70 1.3	71 55.9	73 50.3	75 43.7
19	55 4.2	57 0.9	58 57.6	60 53.2	62 50.9	64 47.5	66 43.2	68 40.4	70 36.3	72 31.1	74 25.1	76 19.5
18	55 38.3	57 35.0	59 31.7	61 27.3	63 24.9	65 21.6	67 17.7	69 15.2	71 11.4	73 6.5	75 1.8	76 55.6
17	56 13.4	58 10.1	60 6.8	62 2.4	63 59.9	65 56.6	67 53.0	69 50.4	71 46.7	73 42.1	75 37.5	77 31.8
16	56 49.5	58 46.2	60 42.9	62 39.5	64 35.9	66 32.6	68 29.3	70 25.7	72 22.3	74 17.8	76 13.5	78 8.3
15	57 22.5	59 21.7	61 18.0	63 14.5	65 11.3	67 7.9	69 4.6	71 1.3	72 58.1	74 53.8	76 49.7	78 44.7
14	58 1.8	59 57.6	61 53.8	63 49.9	65 47.0	67 44.0	69 40.8	71 37.4	73 34.0	75 29.9	77 26.1	79 21.3
13	58 38.4	60 34.0	62 30.0	64 26.2	66 23.0	68 19.6	70 16.5	72 13.2	74 10.1	76 6.2	78 2.5	79 57.5
12	59 15.4	61 11.2	63 6.6	65 3.0	66 59.3	68 56.3	70 53.2	72 49.5	74 46.5	76 42.8	78 39.2	80 34.9
11	59 52.8	61 48.6	63 43.5	65 40.0	67 35.9	69 33.2	71 30.1	73 25.9	75 23.1	77 19.4	79 16.0	
10	60 30.6	62 26.2	64 20.7	66 17.3	68 12.7	70 9.3	72 6.2	74 2.6	75 59.8	77 56.2	79 53.0	
9	61 8.8	63 3.8	64 58.2	66 54.4	68 49.8	70 46.1	72 43.3	74 39.4	76 36.7	78 33.1	80 30.0	
8	61 47.3	63 41.7	65 36.0	67 31.7	69 27.2	71 23.2	73 20.3	75 16.5	77 13.7	79 10.2		
7	62 26.0	64 19.8	66 14.1	68 9.2	70 4.7	72 0.7	73 57.1	75 53.7	77 50.8	79 47.3		
6	63 5.1	64 58.4	66 52.4	68 47.2	70 42.5	72 38.3	74 34.6	76 31.1	78 28.2	80 24.6		
5	63 44.6	65 37.4	67 31.0	69 25.5	71 20.5	73 16.2	75 12.4	77 8.5	79 5.6			
4	64 24.3	66 16.7	68 9.9	70 4.0	71 58.8	73 54.3	75 50.0	77 46.2	79 43.2			
3	65 4.1	66 56.3	68 49.1	70 42.8	72 37.2	74 32.4	76 27.9	78 24.1	80 21.8			
2	65 44.3	67 36.1	69 28.5	71 21.8	73 15.8	75 10.7	77 6.0	79 1.9				
+ 1	66 25.1	68 16.0	70 8.0	72 1.0	73 54.7	75 49.2	77 44.3	79 40.0				
0	67 5.9	68 56.2	70 47.8	72 40.3	74 33.7	76 27.0	78 22.8	80 18.2				
— 1	67 47.0	69 36.7	71 27.8	73 19.8	75 12.9	77 6.7	79 4.5					
2	68 28.2	70 17.4	72 8.0	73 59.6	75 52.2	77 45.7	79 40.1					
3	69 9.6	70 58.4	72 48.4	74 39.5	76 31.7	78 24.8	80 18.8					
4	69 51.3	71 39.5	73 28.9	75 19.6	77 11.3	79 4.0						
5	70 33.1	72 40.7	74 9.6	75 59.8	77 51.0	79 43.3						
6	71 15.2	73 2.1	74 50.5	76 40.1	78 30.9	80 22.7						
7	71 57.5	73 43.7	75 31.5	77 20.6	79 10.9							
8	72 39.9	74 25.5	76 12.7	78 1.2	79 51.0							
9	73 22.4	75 7.4	76 54.0	78 42.0	80 31.2							
10	74 5.1	75 49.5	77 35.4	79 22.8								
11	74 48.0	76 31.7	78 17.0	80 4.7								
12	75 31.0	77 14.0	78 58.7									
13	76 15.7	77 56.5	79 39.9									
14	76 58.4	78 39.0	80 22.3									
15	77 40.8	79 21.6										
16	78 24.3											
— 17	79 7.8											

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TABLES

OF

DIFFERENTIAL REFRACTION,

FOR

THE LATITUDE

OF THE

UNITED STATES NAVAL OBSERVATORY,

FROM + 30° TO — 30° OF DECLINATION, AND TO 80° OF ZENITH DISTANCE.

$d^1 - d$ BEING CONSTANT AND EQUAL TO 600″.

$\Delta\delta$ always increases the observed difference of declination.

East of the meridian $\Delta\alpha$ increases or diminishes the observed difference of right ascension according as the star nearest the Zenith is the *following* or preceding star.

West of the meridian $\Delta\alpha$ increases or diminishes the observed difference of right ascension according as the star nearest the Zenith is the *preceding* or following star.

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Declination.	0 hour.				I hour.				II hours.			
	Δα		Δδ		Δα		Δδ		Δα		Δδ	
	0m.	30m.	0m.	30m.	0m.	30m.	0m.	30m.	0m.	30m.	0m.	30m.
° ′	s.	s.	″	″	s.	s.	″	″	s.	s.	″	″
+30 00	0.000	0.000	0.172	0.172	0.001	0.001	0.172	0.174	0.002	0.002	0.176	0.180
40	0	0	.172	.172	.001	.001	.173	.174	.002	.002	.176	.180
20	0	0	.172	.172	.001	.001	.173	.174	.002	.002	.176	.181
29 00	0	0	0.173	0.173	0.001	0.001	0.174	0.175	0.002	0.002	0.177	0.182
40	0	0	.173	.173	.001	.001	.174	.175	.002	.002	.178	.182
20	0	0	.173	.173	.001	.001	.174	.175	.002	.002	.179	.183
28 00	0	0	0.174	0.174	0.001	0.001	0.175	0.176	0.001	0.002	0.179	0.184
40	0	0	.174	.174	.001	.001	.175	.176	.001	.002	.180	.184
20	0	0	.174	.174	.001	.001	.176	.177	.001	.001	.180	.185
27 00	0	0	0.175	0.175	0.001	0.001	0.176	0.178	0.001	0.001	0.181	0.186
40	0	0	.175	.175	.001	.001	.176	.178	.001	.001	.181	.186
20	0	0	.176	.176	.001	.001	.177	.179	.001	.001	.182	.187
26 00	0	0	0.176	0.177	0.001	0.001	0.177	0.180	0.001	0.001	0.183	0.188
40	0	0	.177	.177	.001	.001	.178	.180	.001	.001	.183	.188
20	0	0	.177	.177	.001	.001	.178	.180	.001	.000	.184	.189
25 00	0	0	0.178	0.178	0.000	0.001	0.179	0.181	0.001	0.000	0.185	0.190
40	0	0	.178	.178	.000	.001	.180	.181	.001	.000	.186	.191
20	0	0	.179	.179	.000	.001	.180	.182	.000	.000	.186	.192
24 00	0	0	0.180	0.180	0.000	0.001	0.181	0.183	0.000	0.000	0.187	0.193
40	0	0	.180	.180	.000	.001	.181	.183	.000	.000	.188	.194
20	0	0	.180	.181	.000	.001	.182	.184	.000	.000	.188	.195
23 00	0	0	0.181	0.181	0.000	0.001	0.183	0.185	0.000	0.000	0.189	0.196
40	0	0	.182	.182	.000	.001	.183	.185	.000	.000	.190	.197
20	0	0	.182	.183	.000	.001	.184	.186	.000	.000	.191	.198
22 00	0	0	0.183	0.183	0.000	0.001	0.185	0.187	0.000	0.000	0.192	0.199
40	0	0	.184	.183	.000	.001	.185	.188	.000	.000	.193	.200
20	0	0	.184	.184	.000	.001	.186	.189	.000	.000	.193	.201
21 00	0	0	0.185	0.185	0.000	0.001	0.187	0.190	0.000	0.000	0.194	0.202
40	0	0	.186	.186	.000	.001	.188	.190	.000	.000	.195	.203
20	0	0	.186	.187	.000	.001	.188	.191	.000	.000	.196	.204
20 00	0	0	0.187	0.188	0.000	0.001	0.189	0.192	0.000	0.001	0.197	0.205
40	0	0	.188	.188	.000	.001	.190	.193	.000	.001	.198	.206
20	0	0	.188	.189	.000	.001	.190	.194	.000	.001	.199	.207
19 00	0	0	0.189	0.190	0.000	0.001	0.192	0.195	0.000	0.001	0.200	0.208
40	0	0	.190	.190	.000	.001	.192	.196	.000	.001	.201	.209
20	0	0	.190	.191	.000	.001	.193	.197	.000	.001	.202	.210
18 00	0	0	0.192	0.192	0.000	0.001	0.194	0.198	0.001	0.001	0.203	0.212
40	0	0	.192	.193	.000	.001	.195	.199	.001	.001	.204	.213
20	0	0	.193	.194	.000	.001	.196	.200	.001	.001	.206	.214
17 00	0	0	0.194	0.195	0.000	0.001	0.197	0.201	0.001	0.002	0.207	0.216
40	0	0	.195	.196	.000	.001	.198	.202	.001	.002	.208	.217
20	0	0	.196	.197	.000	.001	.199	.203	.001	.202	.209	.218
16 00	0	0	0.197	0.198	0.000	0.001	0.200	0.204	0.001	0.002	0.210	0.220
40	0	0	.198	.199	.000	.001	.201	.205	.001	.002	.212	.221
20	0	0	.199	.200	.000	.001	.202	.206	.001	.002	.213	.223
15 00	0	0	0.200	0.201	0.000	0.001	0.203	0.207	0.001	0.002	0.214	0.224
40	0	0	.201	.202	.000	.001	.204	.208	.001	.002	.215	.226
20	0	0	.202	.203	.000	.001	.205	.209	.002	.002	.217	.228
14 00	0	0	0.203	0.204	0.001	0.001	0.206	0.211	0.002	0.003	0.218	0.230
40	0	0	.204	.205	.001	.001	.207	.212	.002	.003	.220	.231
20	0	0	.205	.207	.001	.001	.208	.213	.002	.003	.221	.233
13 00	0	0	0.207	0.208	0.001	0.001	0.210	0.215	0.002	0.003	0.223	0.235
40	0	0	.208	.209	.001	.001	.211	.216	.002	.003	.224	.237
20	0	0	.209	.210	.001	.001	.213	.217	.002	.003	.226	.239
12 00	0	0	0.210	0.211	0.001	0.001	0.214	0.219	0.002	0.003	0.227	0.240
40	0	0	.212	.212	.001	.001	.215	.220	.002	.003	.229	.242
20	0	0	.213	.214	.001	.001	.217	.221	.002	.003	.230	.244
+11 00	0	0	0.214	0.215	0.001	0.001	0.218	0.223	0.002	0.004	0.232	0.246
40	0	0	.215	.216	.001	.001	.219	.224	.002	.004	.233	.248
20	0	0	.217	.217	.001	.001	.221	.226	.003	.004	.235	.250

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Declination.	III hours.											
	Δα						Δδ					
	0m.	10m.	20m.	30m.	40m.	50m.	0m.	10m.	20m.	30m.	40m.	50m.
° ′	s.	s.	s.	s.	s.	s.	″	″	″	″	″	″
+30 00	0.002	0.002	0.002	0.002	0.001	0.001	0.186	0.189	0.193	0.197	0.202	0.207
40	.002	.002	.002	.002	.001	.001	.187	.189	.193	.198	.203	.208
20	.002	.002	.002	.002	.001	.001	.188	.190	.194	.199	.204	.209
29 00	0.002	0.002	0.001	0.001	0.001	0.001	0.189	0.191	0.195	0.200	0.205	0.211
40	.002	.002	.001	.001	.001	.001	.189	.192	.196	.201	.206	.212
20	.002	.002	.001	.001	.001	.001	.190	.193	.197	.202	.207	.213
28 00	0.001	0.001	0.001	0.001	0.000	0.000	0.191	0.194	0.198	0.203	0.208	0.215
40	.001	.001	.001	.001	.000	.000	.192	.195	.199	.204	.209	.216
20	.001	.001	.001	.001	.000	.000	.193	.196	.200	.205	.210	.217
27 00	0.001	0.001	0.000	0.000	0.000	0.000	0.194	0.197	0.201	0.206	0.212	0.219
40	.001	.001	.000	.000	.000	.000	.194	.198	.202	.207	.213	.220
20	.001	.001	.000	.000	.000	.000	.195	.199	.203	.208	.214	.221
26 00	0.001	0.001	0.000	0.000	0.001	0.001	0.196	0.200	0.204	0.210	0.216	0.223
40	.001	.001	.000	.000	.001	.001	.197	.201	.205	.211	.217	.224
20	.001	.001	.000	.000	.001	.001	.198	.202	.206	.212	.218	.226
25 00	0.000	0.000	0.000	0.000	0.001	0.001	0.199	0.203	0.208	0.214	0.220	0.228
40	.000	.000	.000	.000	.001	.001	.200	.204	.209	.215	.221	.229
20	.000	.000	.000	.000	.001	.001	.201	.205	.210	.216	.222	.231
24 00	0.000	0.000	0.001	0.001	0.002	0.002	0.202	0.206	0.212	0.218	0.224	0.233
40	.000	.000	.001	.001	.002	.002	.203	.207	.213	.219	.226	.234
20	.000	.000	.001	.001	.002	.002	.204	.208	.214	.220	.228	.236
23 00	0.000	0.000	0.001	0.001	0.002	0.002	0.206	0.210	0.216	0.222	0.230	0.238
40	.000	.000	.001	.001	.002	.002	.207	.211	.217	.223	.231	.240
20	.000	.000	.001	.001	.002	.002	.208	.212	.218	.225	.233	.242
22 00	0.001	0.001	0.002	0.002	0.003	0.003	0.209	0.214	0.220	0.227	0.235	0.244
40	.001	.001	.002	.002	.003	.003	.210	.215	.221	.228	.236	.246
20	.001	.001	.002	.002	.003	.003	.211	.216	.222	.230	.238	.248
21 00	0.001	0.001	0.002	0.002	0.003	0.004	0.213	0.218	0.224	0.232	0.240	0.250
40	.001	.001	.002	.002	.003	.004	.214	.219	.225	.233	.242	.252
20	.001	.001	.002	.002	.003	.004	.215	.220	.227	.234	.244	.255
20 00	0.002	0.002	0.002	0.003	0.004	0.005	0.217	0.222	0.229	0.236	0.246	0.258
40	.002	.002	.003	.003	.004	.005	.219	.224	.230	.238	.247	.260
20	.002	.002	.003	.003	.004	.005	.220	.225	.232	.240	.250	.262
19 00	0.002	0.002	0.003	0.004	0.004	0.005	0.221	0.227	0.234	0.242	0.252	0.264
40	.002	.002	.003	.004	.005	.005	.223	.228	.235	.244	.254	.266
20	.002	.003	.003	.004	.005	.006	.224	.230	.237	.246	.256	.268
18 00	0.002	0.003	0.003	0.004	0.005	0.006	0.226	0.231	0.239	0.248	0.258	0.271
40	.002	.003	.004	.004	.005	.006	.228	.233	.240	.250	.260	.273
20	.003	.003	.004	.004	.005	.006	.229	.235	.242	.252	.263	.276
17 00	0.003	0.003	0.004	0.005	0.006	0.007	0.231	0.237	0.244	0.254	0.265	0.278
40	.003	.003	.004	.005	.006	.007	.232	.238	.246	.256	.267	.281
20	.003	.004	.004	.005	.006	.007	.234	.240	.248	.258	.270	.283
16 00	0.003	0.004	0.004	0.005	0.006	0.007	0.236	0.242	0.250	0.260	0.272	0.286
40	.003	.004	.005	.005	.006	.008	.238	.244	.252	.263	.275	.289
20	.003	.004	.005	.006	.007	.008	.239	.246	.255	.265	.277	.292
15 00	0.004	0.004	0.005	0.006	0.007	0.008	0.241	0.248	0.257	0.267	0.280	0.295
40	.004	.004	.005	.006	.007	.008	.243	.250	.259	.270	.282	.298
20	.004	.004	.005	.006	.007	.009	.245	.252	.262	.272	.285	.301
14 00	0.004	0.005	0.005	0.006	0.007	0.009	0.247	0.255	0.264	0.275	0.288	0.304
40	.004	.005	.005	.006	.007	.009	.249	.257	.266	.277	.291	.307
20	.004	.005	.005	.006	.007	.009	.251	.259	.268	.280	.294	.310
13 00	0.004	0.005	0.006	0.007	0.008	0.009	0.253	0.261	0.271	0.283	0.297	0.313
40	.004	.005	.006	.007	.008	.009	.255	.263	.273	.285	.300	.316
20	.004	.005	.006	.008	.008	.009	.257	.265	.276	.288	.303	.320
12 00	0.005	0.006	0.007	0.008	0.009	0.010	0.260	0.268	0.279	0.291	0.306	0.324
40	.005	.006	.007	.008	.009	.010	.262	.270	.281	.294	.309	.327
20	.005	.006	.007	.008	.009	.010	.264	.273	.284	.297	.312	.331
+11 00	0.005	0.006	0.007	0.008	0.010	0.011	0.267	0.276	0.287	0.301	0.316	0.335
40	.005	.006	.007	.008	.010	.011	.269	.278	.290	.304	.319	.339
20	.005	.006	.007	.008	.010	.011	.271	.281	.293	.307	.323	.344

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Declination.	IV hours.											
	Δα						Δδ					
	0m.	10m.	20m.	30m.	40m.	50m.	0m.	10m.	20m.	30m.	40m.	50m.
°	s.	s	s.	s.	s.	s.	″	″	″	″	″	″
+30 00	0.000	0.000	0.001	0.002	0.003	0.004	0.214	0.223	0.233	0.245	0.260	0.278
40	.000	.000	.001	.002	.003	.005	.215	.224	.234	.247	.262	.281
20	.000	.000	.001	.002	.003	.005	.217	.226	.236	.249	.264	.284
29 00	0.000	0.001	0.001	0.003	0.004	0.005	0.219	0.227	0.238	0.251	0.267	0.287
40	.000	.001	.001	.003	.004	.005	.220	.229	.240	.253	.269	.289
20	.000	.001	.001	.003	.004	.005	.221	.231	.242	.255	.271	.292
28 00	0.001	0.001	0.002	0.003	0.005	0.006	0.223	0.232	0.244	0.258	0.274	0.295
40	.001	.001	.002	.003	.005	.006	.224	.234	.246	.260	.276	.298
20	.001	.001	.002	.003	.005	.006	.226	.236	.248	.262	.279	.301
27 00	0.001	0.002	0.003	0.004	0.006	0.007	0.227	0.238	0.250	0.264	0.282	0.304
40	.001	.002	.003	.004	.006	.008	.229	.239	.252	.266	.285	.307
20	.001	.002	.003	.004	.006	.008	.230	.241	.254	.269	.288	.310
26 00	0.002	0.003	0.004	0.005	0.007	0.009	0.232	0.243	0.256	0.272	0.291	0.314
40	.002	.003	.004	.005	.007	.009	.234	.245	.258	.274	.293	.217
20	.002	.003	.004	.005	.007	.009	.236	.247	.260	.276	.296	.321
25 00	0.002	0.003	0.004	0.006	0.008	0.010	0.238	0.249	0.263	0.279	0.300	0.325
40	.002	.004	.004	.006	.008	.010	.239	.251	.265	.281	.303	.329
20	.002	.004	.004	.006	.008	.010	.241	.253	.267	.284	.306	.333
24 00	0.003	0.004	0.005	0.007	0.009	0.011	0.243	0.255	0.270	0.288	0.309	0.337
40	.003	.004	.005	.007	.009	.011	.245	.257	.272	.290	.312	.341
20	.003	.004	.005	.007	.009	.011	.247	.259	.274	.293	.316	.345
23 00	0.004	0.005	0.006	0.008	0.010	0.012	0.249	0.262	0.277	0.296	0.320	0.349
40	.004	.005	.006	.008	.010	.012	.251	.264	.279	.299	.323	.353
20	.004	.005	.006	.008	.010	.012	.253	.266	.282	.302	.327	.357
22 00	0.004	0.006	0.007	0.009	0.011	0.013	0.255	0.269	0.285	0.306	0.330	0.362
40	.004	.006	.007	.009	.011	.014	.257	.271	.288	.309	.334	.366
20	.004	.006	.007	.009	.011	.014	.259	.273	.291	.312	.338	.371
21 00	0.005	0.006	0.008	0.010	0.012	0.015	0.262	0.276	0.294	0.316	0.343	0.376
40	.005	.007	.008	.010	.012	.015	.264	.279	.297	.319	.346	.381
20	.005	.007	.008	.010	.012	.015	.266	.282	.300	.322	.350	.386
20 00	0.006	0.007	0.009	0.011	0.013	0.016	0.269	0.284	0.303	0.327	0.355	0.392
40	.006	.007	.009	.011	.013	.017	.271	.287	.306	.330	.359	.398
20	.006	.008	.009	.011	.014	.017	.274	.290	.309	.334	.364	.405
19 00	0.006	0.008	0.009	0.012	0.014	0.018	0.277	0.293	0.313	0.338	0.368	0.411
40	.007	.008	.010	.012	.015	.018	.279	.296	.316	.342	.373	.418
20	.007	.008	.010	.012	.015	.019	.281	.299	.320	.346	.378	.424
18 00	0.007	0.009	0.010	0.013	0.016	0.019	0.284	0.302	0.323	0.351	0.383	0.430
40	.007	.009	.011	.013	.016	.019	.287	.306	.327	.355	.388	.437
20	.008	.009	.011	.013	.016	.020	.290	.310	.331	.359	.393	.444
17 00	0.008	0.009	0.011	0.014	0.017	0.021	0.293	0.312	0.335	0.364	0.398	0.451
40	.008	.010	.012	.014	.017	.022	.296	.315	.338	.368	.404	.457
20	.008	.010	.012	.015	.018	.022	.299	.319	.343	.373	.410	.464
16 00	0.009	0.010	0.012	0.015	0.018	0.023	0.302	0.323	0.347	0.378	0.416	0.471
40	.009	.011	.013	.016	.019	.024	.305	.326	.351	.383	.422	.478
20	.009	.011	.013	.016	.019	.024	.308	.330	.355	.388	.428	.485
15 00	0.010	0.011	0.014	0.016	0.020	0.025	0.312	0.334	0.360	0.394	0.434	0.492
40	.010	.012	.014	.017	.020	.025	.315	.337	.364	.399	.441	.499
20	.010	.012	.014	.017	.021	.026	.319	.341	.369	.405	.447	.506
14 00	0.010	0.012	0.015	0.018	0.022	0.027	0.322	0.346	0.374	0.410	0.454	0.513
40	.011	.013	.015	.018	.022	.028	.325	.350	.379	.415	.461	.521
20	.011	.013	.015	.018	.022	.029	.329	.354	.384	.421	.468	.529
13 00	0.011	0.013	0.016	0.019	0.023	0.029	0.334	0.358	0.389	0.427	0.475	0.537
40	.012	.014	.016	.020	.024	.029	.338	.362	.394	.433	.482	.546
20	.012	.014	.016	.020	.025	.030	.342	.367	.399	.439	.490	.555
12 00	0.012	0.015	0.017	0.021	0.025	0.031	0.345	0.372	0.405	0.446	0.498	0.565
40	.013	.015	.017	.021	.026	.032	.350	.377	.410	.453	.506	.575
20	.013	.015	.017	.022	.027	.033	.354	.382	.416	.460	.515	.586
+11 00	0.013	0.016	0.019	0.023	0.027	0.034	0.358	0.387	0.422	0.467	0.524	0.598
40	.013	.016	.019	.023	.028	.035	.362	.392	.428	.474	.533	.609
20	.013	.016	.019	.023	.028	.035	.367	.397	.434	.481	.542	.621

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Declination.	V hours.											
	$\Delta\alpha$						$\Delta\delta$					
	0m.	10m.	20m.	30m.	40m.	50m.	0m.	10m.	20m.	30m.	40m.	50m.
°	s.	s.	s.	s.	s.	s.	″	″	″	″	″	″
+30 00	0.006	0.009	0.012	0.016	0.021	0.027	0.301	0.328	0.365	0.410	0.469	0.545
40	.006	.009	.012	.016	.021	.028	.304	.333	.370	.416	.476	.554
20	.006	.009	.012	.016	.022	.029	.307	.337	.375	.422	.483	.564
29 00	0.007	0.010	0.013	0.017	0.023	0.030	0.311	0.341	0.380	0.428	0.492	0.574
40	.008	.010	.014	.017	.023	.031	.314	.345	.385	.434	.499	.585
20	.009	.010	.014	.018	.024	.032	.317	.349	.390	.440	.508	.596
28 00	0.009	0.011	0.015	0.019	0.025	0.033	0.321	0.354	0.395	0.448	0.516	0.607
40	.009	.011	.015	.019	.026	.034	.324	.358	.399	.454	.525	.618
20	.009	.012	.016	.020	.027	.035	.328	.362	.405	.461	.534	.630
27 00	0.010	0.013	0.017	0.021	0.028	0.036	0.332	0.367	0.412	0.467	0.543	0.642
40	.010	.013	.017	.022	.029	.037	.336	.372	.418	.475	.552	.655
20	.011	.013	.018	.023	.030	.039	.340	.377	.424	.483	.562	.668
26 00	0.011	0.014	0.019	0.024	0.031	0.040	0.344	0.382	0.430	0.491	0.572	0.681
40	.011	.014	.019	.024	.032	.041	.348	.387	.437	.499	.582	.695
20	.012	.014	.019	.025	.033	.042	.352	.392	.443	.507	.593	.709
25 00	0.012	0.016	0.020	0.026	0.034	0.044	0.357	0.397	0.450	0.516	0.604	0.724
40	.012	.016	.021	.026	.035	.045	.361	.402	.457	.523	.616	.739
20	.013	.016	.021	.027	.036	.046	.365	.408	.464	.530	.628	.755
24 00	0.013	0.017	0.022	0.028	0.037	0.048	0.371	0.414	0.471	0.542	0.638	0.771
40	.013	.018	.023	.029	.038	0.49	.375	.420	.478	.552	.651	.788
20	.014	.018	.023	.030	.039	.050	.380	.426	.485	.562	.664	.806
23 00	0.015	0.019	0.024	0.031	0.040	0.052	0.385	0.432	0.494	0.572	0.679	0.824
40	.015	.020	.025	.032	.041	.054	.390	.438	.502	.582	.692	.843
20	.016	.020	.026	.033	.042	.056	.395	.445	.510	.593	.706	.863
22 00	0.017	0.021	0.027	0.034	0.044	0.058	0.401	0.452	0.519	0.604	0.721	0.883
40	.017	.022	.027	.035	.045	.059	.406	.459	.528	.615	.736	.905
20	.017	.022	.028	.036	.046	.061	.412	.466	.537	.627	.752	.927
21 00	0.018	0.023	0.029	0.037	0.048	0.063	0.418	0.473	0.546	0.639	0.768	0.950
40	.018	.024	.030	.038	.049	.065	.424	.480	.555	.652	.785	.975
20	.019	.024	.030	.039	.051	.067	.430	.488	.565	.665	.803	1.000
20 00	0.020	0.025	0.032	0.040	0.053	0.070	0.437	0.496	0.575	0.678	0.821	1.024
40	.021	.025	.033	.041	.054	.072	.443	.503	.586	.692	.840	.052
20	.022	.026	.034	.042	.056	.074	.450	.512	.597	.706	.859	.079
19 00	0.022	0.027	0.035	0.044	0.058	0.077	0.456	0.521	0.608	0.720	0.879	1.109
40	.022	.028	.036	.045	.059	.079	.464	.530	.620	.736	.901	.139
20	.023	.029	.037	.046	.061	.082	.471	.539	.632	.752	.923	.171
18 00	0.024	0.030	0.038	0.048	0.063	0.085	0.478	0.548	0.643	0.768	0.945	1.204
40	.024	.030	.039	.049	.065	.088	.486	.558	.656	.785	.964	.240
40	.025	.031	.040	.051	.067	.091	.494	.568	.669	.803	.983	.276
17 00	0.026	0.032	0.041	0.053	0.070	0.094	0.502	0.578	0.682	0.820	1.020	1.312
40	.026	.033	.042	.054	.072	.097	.510	.589	.696	.839	.036	.353
20	.027	.034	.043	.056	.074	.101	.519	.600	.710	.853	.053	.395
16 00	0.028	0.035	0.045	0.058	0.077	0.105	0.528	0.611	0.725	0.879	1.100	1.437
40	.029	.036	.046	.059	.079	.109	.537	.622	.740	.900	.132	.451
20	.029	.037	.047	.061	.082	.113	.546	.635	.755	.922	.164	.466
15 00	0.030	0.038	0.049	0.063	0.085	0.117	0.556	0.647	0.771	0.945	1.197	1.580
40	.031	.039	.050	.065	.088	.121	.566	.660	.785	.967	.233	.601
20	.032	.040	.051	.067	.091	.126	.576	.673	.800	.989	.269	.623
14 00	0.033	0.041	0.053	0.070	0.094	0.131	0.586	0.686	0.826	1.018	1.305	1.745
40	.034	.042	.054	.072	.097	.136	.597	.700	.845	.046	.346	.809
20	.035	.043	.056	.074	.100	.141	.609	.715	.864	.074	.387	.873
13 00	0.036	0.045	0.058	0.077	0.104	0.147	0.621	0.730	0.882	1.103	1.429	1.937
40	.037	.046	.060	.079	.108	.153	.632	.746	.905	.134	.476	2.012
20	.038	.048	.062	.081	.112	.159	.644	.762	.928	.165	.523	.087
12 00	0.039	0.049	0.064	0.084	0.116	0.166	0.656	0.778	0.952	1.196	1.571	2.163
40	.040	.050	.066	.087	.120	.173	.669	.795	.975	.232	.624	.253
20	.041	.052	.068	.090	.125	.180	.682	.813	.999	.268	.679	.344
+11 00	0.042	0.054	0.070	0.094	0.130	0.188	0.697	0.831	1.023	1.304	1.734	2.433
40	.043	.055	.072	.096	.135	.197	.712	.851	.051	.344	.797	.541
20	.044	.057	.074	.099	.140	.206	.727	.871	.079	.385	.860	.650

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Declination.	VI hours.											
	Δα						Δδ					
	0m.	10m.	20m.	30m.	40m.	50m.	0m.	10m.	20m.	30m.	40m.	50m.
°	s.	s.	s.	s.	s.	s.	″	″	″	″	″	″
+30 00	0.036	0.047	0.062	0.084	0.116	0.162	0.661	0.781	0.969	1.235	1.625	2.211
40	.037	.048	.064	.087	.120		.669	.799	.995	.273	.682	
20	.038	.050	.066	.090	.125		.677	.817	1.021	.311	.739	
29 00	0.039	0.052	0.069	0.094	0.130		0.685	0.835	1.047	1.350	1.798	
40	.040	.053	.071	.097	.135		.699	.855	.076	.393	.865	
20	.041	.055	.074	.101	.141		.713	.875	.105	.436	.932	
28 00	0.043	0.057	0.077	0.105	0.147		0.728	0.895	1.134	1.480	2.000	
40	.044	.059	.079	.109	.153		.744	.918	.166	.529	.079	
20	.045	.061	.082	.113	.160		.760	.941	.199	.579	.159	
27 00	0.047	0.063	0.085	0.118	0.167		0.777	0.964	1.232	1.629	2.239	
40	.048	.064	.088	.122			.794	.989	.270	.686		
20	.049	.066	.091	.126			.812	1.015	.308	.744		
26 00	0.051	0.068	0.095	0.131			0.830	1.041	1.346	1.802		
40	.053	.071	.098	.137			.849	.069	.389	.870		
20	.055	.074	.102	.143			.869	.097	.432	.938		
25 00	0.057	0.077	0.106	0.149			0.889	1.126	1.475	2.006		
40	.059	.079	.110				.911	.158	.524			
20	.061	.082	.114				.934	.190	.573			
24 00	0.063	0.085	0.119				0.957	1.223	1.623			
40	.065	.088	.123				.982	.260	.680			
20	.067	.091	.128				1.007	.297	.737			
23 00	0.070	0.095	0.133				1.033	1.335	1.796			
40	.072	.098	.138				.061	.337	.863			
20	.075	.102	.144				.089	.420	.930			
22 00	0.078	0.106	0.150				1.118	1.463	1.997			
40	.080	.110					.150	.512				
20	.082	.114					.182	.561				
21 00	0.085	0.118					1.214	1.610				
40	.088	.123					.250	.666				
20	.091	.128					.287	.722				
20 00	0.095	0.133					1.324	1.779				
40	.098	.138					.366	.846				
20	.102	.144					.408	.913				
19 00	0.106	0.150					1.451	1.979				
40	.110						.499					
20	.114						.547					
18 00	0.118						1.596					
40	.122						.651					
20	.127						.707					
17 00	0.132						1.763					
40	.137						.828					
20	.142						.893					
+16 00	0.148						1.958					

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Declination.	0 hour.											
	$\Delta\alpha$						$\Delta\delta$					
	0m.	10m.	20m.	30m.	40m.	50m.	0m.	10m.	20m.	30m.	40m.	50m.
°	s.	s.	s.	s.	s.	s.	″	″	″	″	″	″
+10 00	0.000	0.000	0.000	0.000	0.001	0.001	0.218	0.218	0.219	0.219	0.220	0.221
40	0	0	0	.000	.001	.001	.220	.220	.220	.221	.221	.222
20	0	0	0	.000	.001	.001	.221	.221	.221	.222	.223	.224
9 00	0	0	0	0.001	0.001	0.001	0.222	0.223	0.223	0.223	0.224	0.225
40	0	0	0	.001	.001	.001	.224	.224	.224	.225	.226	.227
20	0	0	0	.001	.001	.001	.225	.226	.226	.227	.227	.229
8 00	0	0	0	0.001	0.001	0.001	0.227	0.227	0.228	0.228	0.229	0.230
40	0	0	0	.001	.001	.001	.229	.229	.229	.230	.231	.232
20	0	0	0	.001	.001	.001	.230	.230	.231	.231	.232	.234
7 00	0	0	0	0.001	0.001	0.001	0.232	0.232	0.232	0.233	0.234	0.235
40	0	0	0	.001	.001	.001	.234	.234	.234	.235	.236	.237
20	0	0	0	.001	.001	.001	.235	.236	.235	.237	.238	.239
6 00	0	0	0.000	0.001	0.001	0.001	0.237	0.237	0.238	0.238	0.239	0.241
40	0	0	.001	.001	.001	.001	.239	.239	.239	.240	.241	.243
20	0	0	.001	.001	.001	.001	.241	.241	.241	.242	.243	.244
5 00	0	0	0.001	0.001	0.001	0.001	0.243	0.243	0.243	0.244	0.245	0.246
40	0	0	.001	.001	.001	.001	.244	.245	.245	.246	.247	.248
20	0	0	.001	.001	.001	.001	.246	.247	.246	.248	.249	.250
4 00	0	0	0.001	0.001	0.001	0.002	0.248	0.249	0.249	0.250	0.251	0.252
40	0	0	.001	.001	.001	.002	.250	.251	.251	.252	.253	.255
20	0	0	.001	.001	.001	.002	.252	.253	.253	.254	.255	.257
3 00	0	0	0.001	0.001	0.001	0.002	0.255	0.255	0.255	0.256	0.257	0.259
40	0	0	.001	.001	.001	.002	.257	.257	.257	.258	.260	.261
20	0	0	.001	.001	.001	.002	.259	.259	.260	.261	.262	.264
2 00	0	0	0.001	0.001	0.001	0.002	0.261	0.261	0.262	0.263	0.264	0.266
40	0	0	.001	.001	.001	.002	.263	.263	.264	.265	.266	.268
20	0	0	.001	.001	.001	.002	.265	.266	.266	.268	.268	.270
+ 1 00	0	0	0.001	0.001	0.002	0.002	0.268	0.269	0.269	0.271	0.271	0.273
40	0	0	.001	.001	.002	.002	.271	.271	.271	.273	.273	.275
20	0	0	.001	.001	.002	.002	.273	.273	.274	.275	.276	.278
0 00	0	0	0.001	0.001	0.002	0.002	0.276	0.276	0.277	0.278	0.279	0.281
20	0	0	.001	.001	.002	.002	.278	.278	.279	.280	.281	.283
40	0	0	.001	.001	.002	.002	.281	.281	.282	.283	.284	.286
— 1 00	0	0	0.001	0.001	0.002	0.002	0.284	0.284	0.285	0.286	0.287	0.289
20	0	0	.001	.001	.002	.002	.286	.287	.287	.288	.290	.292
40	0	0	.001	.001	.002	.002	.289	.290	.290	.291	.293	.295
2 00	0	0	0.001	0.001	0.002	0.002	0.292	0.293	0.293	0.294	0.296	0.298
20	0	0	.001	.001	.002	.002	.295	.296	.296	.297	.299	.301
40	0	0	.001	.001	.002	.002	.298	.299	.299	.300	.302	.304
3 00	0	0	0.001	0.001	0.002	0.003	0.301	0.302	0.302	0.304	0.305	0.308
20	0	0	.001	.001	.002	.003	.304	.305	.305	.307	.308	.311
40	0	0	.001	.001	.002	.003	.308	.308	.308	.310	.311	.314
4 00	0	0	0.001	0.002	0.002	0.003	0.311	0.311	0.312	0.314	0.315	0.318
20	0	0	.001	.002	.002	.003	.314	.314	.315	.317	.318	.321
40	0	0	.001	.002	.002	.003	.318	.318	.319	.320	.322	.325
5 00	0	0	0.001	0.002	0.002	0.003	0.321	0.322	0.323	0.324	0.326	0.329
20	0	0	.001	.002	.002	.003	.325	.325	.326	.327	.329	.332
40	0	0	.001	.002	.002	.003	.329	.329	.330	.331	.333	.336
6 00	0	0	0.001	0.002	0.002	0.003	0.332	0.333	0.334	0.335	0.337	0.340
20	0	0	.001	.002	.002	.003	.336	.336	.337	.339	.341	.344
40	0	0	.001	.002	.002	.003	.340	.340	.341	.343	.345	.348
7 00	0	0.001	0.001	0.002	0.003	0.003	0.344	0.345	0.345	0.347	0.349	0.353
20	0	.001	.001	.002	.003	.003	.348	.349	.349	.351	.353	.357
40	0	.001	.001	.002	.003	.003	.352	.353	.353	.355	.358	.361
8 00	0	0.001	0.001	0.002	0.003	0.003	0.357	0.357	0.358	0.360	0.363	0.366
20	0	.001	.001	.002	.003	.003	.361	.361	.362	.364	.367	.370
40	0	.001	.001	.002	.003	.003	.365	.365	.367	.369	.372	.375
— 9 00	0	0.001	0.001	0.002	0.003	0.004	0.370	0.370	0.372	0.374	0.377	0.380
20	0	.001	.001	.002	.003	.004	.375	.375	.377	.379	.382	.385
40	0.000	.001	.001	.002	.003	.004	.380	.380	.382	.384	.387	.390

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Declination.	I hour.											
	$\Delta\alpha$						$\Delta\delta$					
	0m.	10m.	20m.	30m	40m.	50m.	0m.	10m.	20m.	30m.	40m.	50m.
°	s.	s.	s	s.	s.	s.	″	″	″	″	″	″
+10 00	0.001	0.001	0.001	0.002	0.002	0.002	0.222	0.224	0.226	0.228	0.231	0.234
40	.001	.001	.001	.002	.002	.002	.224	.225	.227	.230	.232	.236
20	.001	.001	.002	.002	.002	.002	.225	.227	.229	.231	.234	.237
9 00	0.001	0.001	0.002	0.002	0.002	0.002	0.227	0.229	0.231	0.233	0.236	0.239
40	.001	.001	.002	.002	.002	.003	.229	.230	.232	.235	.238	.241
20	.001	.001	.002	.002	.002	.003	.230	.232	.234	.236	.239	.243
8 00	0.001	0.001	0.002	0.002	0.002	0.003	0.232	0.233	0.236	0.238	0.241	0.245
40	.001	.002	.002	.002	.002	.003	.233	.235	.237	.240	.243	.247
20	.001	.002	.002	.002	.003	.003	.235	.237	.239	.242	.245	.249
7 00	0.001	0.002	0.002	0.002	0.003	0.003	0.237	0.239	0.241	0.244	0.247	0.251
40	.001	.002	.002	.002	.003	.003	.239	.241	.243	.246	.249	.253
20	.001	.002	.002	.002	.003	.003	.241	.242	.245	.248	.251	.255
6 00	0.001	0.002	0.002	0.002	0.003	0.003	0.242	0.244	0.247	0.250	0.253	0.257
40	.001	.002	.002	.003	.003	.003	.244	.246	.249	.252	.255	.259
20	.001	.002	.002	.003	.003	.003	.246	.248	.251	.254	.257	.260
5 00	0.002	0.002	0.002	0.003	0.003	0.004	0.248	0.250	0.253	0.256	0.260	0.264
40	.002	.002	.002	.003	.003	.004	.250	.252	.255	.258	.262	.266
20	.002	.002	.002	.003	.003	.004	.252	.255	.257	.260	.264	.268
4 00	0.002	0.002	0.002	0.003	0.003	0.004	0.254	0.257	0.259	0.263	0.266	0.271
40	.002	.002	.003	.003	.003	.004	.257	.259	.262	.265	.269	.273
20	.002	.002	.003	.003	.004	.004	.259	.261	.264	.267	.271	.275
3 00	0.002	0.002	0.003	0.003	0.004	0.004	0.261	0.263	0.266	0.270	0.274	0.278
40	.002	.002	.003	.003	.004	.004	.263	.266	.269	.272	.276	.281
20	.002	.002	.003	.003	.004	.004	.266	.268	.271	.275	.279	.284
2 00	0.002	0.002	0.003	0.003	0.004	0.004	0.268	0.271	0.274	0.277	0.282	0.287
40	.002	.003	.003	.003	.004	.005	.270	.273	.276	.279	.284	.291
20	.002	.003	.003	.003	.004	.005	.273	.275	.278	.282	.287	.295
+ 1 00	0.002	0.003	0.003	0.004	0.004	0.005	0.275	0.278	0.281	0.285	0.290	0.299
40	.002	.003	.003	.004	.004	.005	.278	.280	.284	.288	.293	.302
20	.002	.003	.003	.004	.004	.005	.281	.283	.287	.291	.296	.305
0 00	0.002	0.003	0.003	0.004	0.005	0.005	0.283	0.286	0.290	0.294	0.299	0.309
20	.002	.003	.004	.004	.005	.005	.286	.289	.293	.297	.302	.312
40	.003	.003	.004	.004	.005	.005	.289	.292	.296	.300	.305	.315
— 1 00	0.003	0.003	0.004	0.004	0.005	0.006	0.292	0.295	0.299	0.303	0.309	0.318
20	.003	.003	.004	.004	.005	.006	.295	.298	.302	.306	.312	.321
40	.003	.003	.004	.004	.005	.006	.298	.301	.305	.309	.315	.325
2 00	0.003	0.003	0.004	0.005	0.005	0.006	0.301	0.304	0.308	0.313	0.319	0.329
20	.003	.003	.004	.005	.005	.006	.304	.307	.311	.316	.322	.333
40	.003	.003	.004	.005	.005	.006	.307	.310	.314	.320	.326	.337
3 00	0.003	0.004	0.004	0.005	0.006	0.006	0.311	0.314	0.318	0.324	0.330	0.341
20	.003	.004	.004	.005	.006	.007	.314	.317	.321	.327	.333	.345
40	.003	.004	.004	.005	.006	.007	.317	.320	.325	.331	.337	.349
4 00	0.003	0.004	0.005	0.005	0.006	0.007	0.321	0.325	0.329	0.335	0.341	0.354
20	.003	.004	.005	.005	.006	.007	.324	.328	.333	.339	.345	.358
40	.003	.004	.005	.005	.006	.007	.328	.332	.337	.343	.349	.362
5 00	0.003	0.004	0.005	0.006	0.006	0.007	0.332	0.336	0.341	0.347	0.354	0.367
20	.003	.004	.005	.006	.006	.007	.336	.340	.345	.351	.358	.371
40	.003	.004	.005	.006	.007	.008	.340	.344	.349	.355	.362	.376
6 00	0.004	0.004	0.005	0.006	0.007	0.008	0.344	0.349	0.353	0.360	0.367	0.381
20	.004	.004	.005	.006	.007	.008	.348	.352	.357	.364	.372	.384
40	.004	.004	.005	.006	.007	.008	.352	.356	.362	.369	.377	.387
7 00	0.004	0.005	0.005	0.006	0.007	0.008	0.356	0.361	0.367	0.374	0.382	0.391
20	.004	.005	.006	.006	.007	.008	.360	.365	.371	.379	.387	.396
40	.004	.005	.006	.007	.008	.008	.365	.370	.376	.384	.392	.401
8 00	0.004	0.005	0.006	0.007	0.008	0.009	0.370	0.375	0.381	0.389	0.397	0.407
20	.004	.005	.006	.007	.008	.009	.375	.380	.386	.392	.402	.413
40	.004	.005	.007	.007	.008	.009	.380	.385	.391	.396	.408	.419
— 9 00	0.005	0.005	0.007	0.007	0.008	0.010	0.385	0.390	0.397	0.404	0.414	0.425
20	.005	.005	.007	.007	.008	.010	.390	.395	.402	.410	.420	.431
40	.005	.005	.007	.007	.008	.010	.395	.400	.407	.416	.426	.437

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Declination.	II hours.											
	Δα						Δδ					
	0m.	10m.	20m.	30m.	40m.	50m.	0m.	10m.	20m.	30m.	40m.	50m.
° ′	s.	s.	s.	s.	s.	s.	″	″	″	″	″	″
+10 00	0.003	0.003	0.003	0.004	0.004	0.005	0.237	0.241	0.246	0.252	0.258	0.265
40	.003	.003	.003	.004	.004	.005	.239	.243	.248	.254	.260	.267
20	.003	.003	.004	.004	.005	.005	.241	.245	.250	.256	.262	.270
9 00	0.003	0.003	0.004	0.004	0.005	0.006	0.243	0.247	0.252	0.258	0.265	0.273
40	.003	.003	.004	.004	.005	.006	.245	.249	.254	.260	.267	.275
20	.003	.003	.004	.004	.005	.006	.247	.251	.256	.262	.269	.278
8 00	0.003	0.003	0.004	0.005	0.005	0.006	0.249	0.253	0.258	0.265	0.272	0.281
40	.003	.003	.004	.005	.005	.006	.251	.255	.261	.267	.274	.283
20	.003	.003	.004	.005	.006	.006	.253	.257	.263	.269	.277	.286
7 00	0.003	0.004	0.004	0.005	0.006	0.007	0.255	0.260	0.265	0.272	0.280	0.289
40	.004	.004	.005	.005	.006	.007	.257	.262	.267	.274	.282	.291
20	.004	.004	.005	.005	.006	.007	.259	.264	.270	.277	.285	.294
6 00	0.004	0.004	0.005	0.006	0.006	0.007	0.261	0.267	0.273	0.280	0.288	0.297
40	.004	.004	.005	.006	.006	.007	.263	.269	.275	.282	.291	.300
20	.004	.005	.005	.006	.006	.008	.265	.271	.277	.285	.294	.303
5 00	0.004	0.005	0.005	0.006	0.007	0.008	0.268	0.274	0.280	0.288	0.297	0.306
40	.004	.005	.005	.006	.007	.008	.270	.276	.283	.291	.300	.309
20	.004	.005	.005	.006	.007	.008	.273	.279	.286	.294	.303	.313
4 00	0.004	0.005	0.006	0.006	0.007	0.008	0.276	0.282	0.289	0.297	0.306	0.317
40	.004	.005	.006	.007	.008	.008	.278	.284	.291	.300	.309	.320
20	.005	.005	.006	.007	.008	.009	.281	.287	.294	.303	.312	.324
3 00	0.005	0.005	0.006	0.007	0.008	0.009	0.284	0.290	0.298	0.306	0.316	0.328
40	.005	.005	.006	.007	.008	.009	.286	.293	.300	.309	.319	.331
20	.005	.006	.007	.007	.008	.010	.289	.296	.303	.312	.323	.335
2 00	0.005	0.006	0.007	0.007	0.008	0.010	0.292	0.299	0.307	0.316	0.327	0.339
40	.005	.006	.007	.008	.008	.010	.295	.302	.310	.319	.330	.343
20	.005	.006	.007	.008	.009	.010	.298	.305	.313	.323	.334	.347
+ 1 00	0.005	0.006	0.007	0.008	0.009	0.010	0.302	0.309	0.317	0.327	0.338	0.352
40	.006	.006	.008	.008	.009	.010	.305	.312	.320	.330	.342	.356
20	.006	.006	.008	.008	.010	.011	.308	.315	.324	.334	.346	.360
0 00	0.006	0.007	0.008	0.009	0.010	0.011	0.311	0.319	0.328	0.338	0.351	0.365
20	.006	.007	.008	.009	.010	.011	.315	.322	.331	.342	.355	.369
40	.006	.007	.008	.009	.010	.012	.318	.326	.335	.346	.359	.374
— 1 00	0.006	0.007	0.008	0.009	0.010	0.012	0.322	0.330	0.339	0.351	0.364	0.379
20	.006	.008	.008	.009	.010	.012	.325	.334	.343	.355	.368	.384
40	.007	.008	.008	.010	.011	.013	.329	.338	.347	.359	.373	.389
2 00	0.007	0.008	0.009	0.010	0.011	0.013	0.333	0.342	0.352	0.364	0.378	0.394
20	.007	.008	.009	.010	.011	.013	.337	.346	.356	.368	.383	.399
40	.007	.008	.009	.011	.012	.014	.341	.350	.360	.373	.388	.405
3 00	0.007	0.008	0.009	0.011	0.012	0.014	0.345	0.354	0.365	0.378	0.393	0.411
20	.007	.008	.009	.011	.012	.014	.349	.358	.369	.382	.398	.417
40	.008	.009	.010	.011	.013	.015	.353	.363	.374	.387	.404	.423
4 00	0.008	0.009	0.010	0.011	0.013	0.015	0.357	0.368	0.379	0.393	0.410	0.429
20	.008	.009	.010	.011	.013	.015	.362	.371	.384	.398	.415	.435
40	.008	.009	.011	.012	.014	.016	.366	.375	.389	.404	.421	.441
5 00	0.008	0.009	0.011	0.012	0.014	0.016	0.371	0.382	0.395	0.410	0.427	0.448
20	.009	.009	.011	.012	.014	.016	.376	.387	.400	.416	.433	.455
40	.009	.010	.011	.012	.015	.016	.381	.392	.406	.422	.440	.462
6 00	0.009	0.010	0.011	0.013	0.015	0.017	0.386	0.398	0.412	0.428	0.447	0.469
20	.009	.010	.011	.013	.015	.017	.391	.403	.417	.434	.453	.477
40	.009	.010	.012	.014	.016	.017	.397	.408	.423	.440	.460	.486
7 00	0.010	0.011	0.012	0.014	0.016	5.018	0.402	0.414	0.429	0.447	0.467	0.493
20	.010	.011	.012	.014	.016	.018	.407	.420	.435	.454	.474	.501
40	.010	.011	.013	.015	.016	.019	.412	.426	.442	.461	.482	.509
8 00	0.010	0.012	0.013	0.015	0.017	0.019	0.418	0.433	0.449	0.468	0.490	0.517
20	.010	.012	.013	.015	.017	.019	.424	.439	.456	.475	.498	.526
40	.011	.012	.014	.016	.018	.020	.430	.445	.463	.483	.506	.535
— 9 00	0.011	0.012	0.014	0.016	0.018	0.021	0.437	0.452	0.470	0.490	0.515	0.544
20	.011	.012	.014	.016	.018	.021	.443	.459	.477	.498	.524	.554
40	.012	.012	.015	.017	.019	.021	.450	.466	.484	.507	.533	.564

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Declination.	III hours.											
	$\Delta\alpha$						$\Delta\delta$					
	0m.	10m.	20m.	30m.	40m.	50m.	0m.	10m.	20m.	30m.	40m.	50m.
° ′	s.	s.	s.	s.	s.	s.	″	″	″	″	″	″
+10 00	0.006	0.007	0.008	0.009	0.010	0.012	0.274	0.284	0.296	0.310	0.327	0.347
40	.006	.007	.008	.009	.010	.012	.276	.287	.299	.313	.331	.351
20	.006	.007	.008	.009	.010	.012	.279	.290	.302	.317	.335	.355
9 00	0.006	0.007	0.008	0.010	0.011	0.013	0.282	0.293	0.305	0.321	0.339	0.360
40	.006	.007	.008	.010	.011	.013	.284	.296	.308	.324	.343	.364
20	.006	.007	.008	.010	.011	.013	.287	.299	.311	.327	.347	.369
8 00	0.007	0.008	0.009	0.011	0.012	0.014	0.290	0.302	0.315	0.331	0.351	0.374
40	.007	.008	.009	.011	.012	.014	.293	.305	.318	.335	.355	.379
20	.007	.008	.009	.011	.012	.014	.296	.308	.321	.339	.359	.384
7 00	0.008	0.008	0.010	0.011	0.013	0.015	0.299	0.311	0.326	0.343	0.364	0.389
40	.008	.008	.010	.011	.013	.015	.302	.314	.329	.347	.368	.394
20	.008	.008	.010	.011	.013	.016	.305	.318	.333	.351	.373	.400
6 00	0.008	0.009	0.011	0.012	0.014	0.017	0.309	0.322	0.337	0.356	0.378	0.406
40	.008	.009	.011	.012	.014	.017	.312	.325	.341	.360	.383	.411
20	.008	.009	.011	.012	.014	.017	.315	.329	.345	.365	.388	.417
5 00	0.009	0.010	0.011	0.013	0.015	0.018	0.319	0.333	0.350	0.370	0.394	0.423
40	.009	.010	.011	.013	.015	.018	.322	.337	.354	.374	.399	.429
20	.009	.010	.011	.013	.015	.018	.326	.341	.358	.379	.404	.435
4 00	0.009	0.011	0.012	0.014	0.016	0.019	0.330	0.345	0.361	0.384	0.410	0.442
40	.009	.011	.012	.014	.016	.019	.333	.349	.367	.389	.416	.448
20	.009	.011	.012	.014	.017	.020	.337	.353	.372	.394	.422	.455
3 00	0.010	0.012	0.013	0.015	0.018	0.021	0.341	0.358	0.377	0.400	0.428	0.462
40	.010	.012	.013	.015	.018	.021	.345	.362	.382	.405	.434	.469
20	.010	.012	.013	.015	.018	.021	.349	.367	.387	.411	.440	.477
2 00	0.011	0.012	0.014	0.016	0.019	0.022	0.354	0.372	0.392	0.417	0.447	0.485
40	.011	.012	.014	.016	.019	.022	.358	.376	.398	.423	.454	.493
20	.011	.012	.014	.017	.019	.023	.362	.381	.403	.429	.461	.501
+ 1 00	0.012	0.013	0.015	0.018	0.020	0.024	0.367	0.386	0.408	0.435	0.468	0.509
40	.012	.013	.015	.018	.020	.024	.372	.391	.414	.441	.475	.517
20	.012	.013	.015	.018	.021	.025	.377	.396	.420	.448	.483	.526
0 00	0.013	0.014	0.016	0.019	0.022	0.026	0.382	0.401	0.426	0.455	0.491	0.535
20	.013	.014	.016	.019	.022	.027	.387	.407	.432	.462	.499	.544
40	.013	.014	.017	.020	.023	.028	.392	.413	.438	.469	.507	.553
— 1 00	0.013	0.015	0.018	0.021	0.024	0.029	0.397	0.419	0.445	0.477	0.515	0.563
20	.013	.015	.018	.021	.024	.029	.402	.425	.452	.484	.524	.573
40	.013	.015	.018	.021	.024	.029	.408	.431	.459	.492	.533	.584
2 00	0.014	0.016	0.019	0.022	0.025	0.030	0.414	0.438	0.466	0.500	0.542	0.595
20	.014	.016	.019	.022	.026	.030	.420	.444	.473	.508	.552	.606
40	.015	.017	.020	.023	.027	.031	.426	.451	.481	.517	.562	.617
3 00	0.016	0.018	0.020	0.024	0.028	0.032	0.432	0.458	0.487	0.526	0.572	0.629
20	.016	.018	.020	.024	.028	.033	.438	.465	.497	.535	.582	.641
40	.016	.018	.021	.024	.029	.034	.445	.472	.405	.544	.593	.654
4 00	0.017	0.019	0.022	0.025	0.030	0.035	0.452	0.479	0.512	0.553	0.604	0.667
20	.017	.019	.022	.026	.030	.036	.459	.487	.521	.563	.616	.681
40	.017	.019	.023	.026	.031	.037	.466	.495	.530	.573	.629	.695
5 00	0.018	0.020	0.024	0.027	0.032	0.038	0.473	0.503	0.539	0.584	0.642	0.709
20	.018	.020	.024	.027	.033	.039	.480	.511	.548	.595	.654	.724
40	.019	.020	.024	.028	.034	.040	.488	.520	.558	.606	.666	.740
6 00	0.019	0.021	0.025	0.029	0.035	0.041	0.496	0.529	0.568	0.617	0.678	0.756
20	.019	.022	.025	.030	.035	.042	.504	.538	.578	.629	.692	.772
40	.020	.023	.026	.031	.036	.043	.512	.547	.589	.641	.706	.789
7 00	0.021	0.024	0.027	0.032	0.037	0.045	0.521	0.557	0.600	0.654	0.721	0.806
20	.021	.024	.028	.033	.038	.046	.530	.567	.611	.667	.736	.825
40	.021	.025	.029	.034	.039	.047	.539	.577	.623	.680	.752	.844
8 00	0.022	0.026	0.030	0.035	0.041	0.049	0.549	0.588	0.635	0.694	0.768	0.863
20	.022	.026	.030	.035	.042	.051	.559	.599	.648	.709	.785	.884
40	.023	.027	.031	.036	.043	.053	.569	.610	.661	.724	.803	.906
— 9 00	0.024	0.028	0.032	0.037	0.044	0.055	0.579	0.622	0.674	0.739	0.821	0.928
20	.024	.028	.033	.038	.045	.056	.590	.634	.688	.755	.840	.951
40	.025	.029	.034	.039	.046	.058	.601	.646	.702	.770	.860	.975

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Declination.	IV hours.											
	Δα						Δδ					
	0m.	10m.	20m.	30m.	40m.	50m.	0m.	10m.	20m.	30m.	40m.	50m.
° ′	s.	s	s.	s.	s.	s.	″	″	″	″	″	″
+10 00	0.014	0.017	0.020	0.024	0.030	0.037	0.372	0.403	0.441	0.489	0.551	0.633
40	.014	.017	.020	.024	.030	.038	.377	.408	.447	.497	.561	.645
20	.014	.017	.021	.025	.031	.039	.382	.414	.454	.505	.571	.658
9 00	0.015	0.018	0.022	0.026	0.032	0.040	0.387	0.420	0.461	0.514	0.581	0.671
40	.015	.018	.022	.026	.033	.041	.392	.426	.468	.522	.592	.685
20	.016	.019	.023	.027	.034	.042	.397	.432	.476	.531	.603	.699
8 00	0.017	0.020	0.024	0.028	0.035	0.043	0.403	0.439	0.484	0.540	0.614	0.713
40	.017	.020	.024	.029	.036	.044	.408	.445	.492	.549	.626	.728
20	.017	.020	.024	.030	.037	.045	.414	.452	.500	.559	.638	.743
7 00	0.018	0.021	0.025	0.031	0.038	0.047	0.420	0.459	0.508	0.569	0.651	0.759
40	.018	.021	.025	.031	.039	.048	.426	.466	.516	.579	.664	.776
20	.018	.022	.026	.032	.040	.049	.432	.473	.524	.590	.677	.793
6 00	0.019	0.023	0.027	0.033	0.041	0.051	0.439	0.481	0.533	0.601	0.691	0.810
40	.019	.023	.028	.034	.042	.052	.445	.489	.542	.612	.705	.828
20	.020	.024	.029	.035	.043	.054	.452	.497	.552	.624	.720	.846
5 00	0.021	0.025	0.030	0.036	0.044	0.056	0.459	0.505	0.562	0.636	0.735	0.865
40	.021	.025	.030	.037	.045	.057	.466	.513	.572	.649	.751	.887
20	.022	.026	.031	.038	.046	.059	.473	.522	.582	.662	.767	.909
4 00	0.023	0.027	0.032	0.039	0.048	0.061	0.481	0.531	0.593	0.675	0.784	0.932
40	.023	.027	.033	.040	.049	.063	.489	.540	.605	.689	.802	.956
20	.023	.028	.034	.041	.050	.065	.497	.549	.617	.703	.820	.980
3 00	0.024	0.029	0.035	0.042	0.052	0.067	0.505	0.559	0.629	0.717	0.838	1.004
40	.024	.030	.036	.043	.053	.069	.513	.569	.641	.733	.858	.031
20	.025	.030	.037	.044	.055	.071	.522	.579	.653	.749	.878	.058
2 00	0.026	0.031	0.038	0.046	0.057	0.073	0.531	0.589	0.665	0.765	0.899	1.085
40	.026	.032	.039	.047	.059	.075	.540	.600	.678	.782	.921	.116
20	.027	.033	.040	.048	.061	.077	.549	.611	.693	.800	.943	.148
+ 1 00	0.028	0.034	0.041	0.050	0.063	0.080	0.560	0.623	0.706	0.817	0.966	1.180
40	.028	.034	.042	.051	.065	.083	.569	.635	.721	.836	.991	.213
20	.029	.035	.043	.052	.067	.086	.579	.648	.736	.855	1.017	.246
0 00	0.030	0.036	0.044	0.054	0.069	0.089	0.590	0.661	0.752	0.875	1.043	1.284
20	.031	.037	.045	.055	.071	.092	.601	.674	.769	.896	.072	.324
40	.032	.038	.046	.057	.073	.095	.622	.688	.786	.918	.101	.364
— 1 00	0.033	0.039	0.048	0.059	0.075	0.098	0.624	0.702	0.803	0.940	1.130	1.405
20	.034	.040	.049	.061	.077	.101	.636	.717	.822	.964	.163	.451
40	.035	.041	.050	.063	.080	.105	.648	.732	.841	.988	.196	.498
2 00	0.036	0.043	0.052	0.065	0.083	0.109	0.661	0.748	0.860	1.013	1.230	1.545
20	.036	.044	.053	.067	.086	.113	.674	.764	.881	.040	.267	.565
40	.037	.045	.055	.069	.089	.117	.688	.781	.902	.068	.308	.585
3 00	0.038	0.046	0.057	0.071	0.092	0.122	0.702	0.798	0.923	1.096	1.342	1.706
20	.039	.047	.058	.073	.095	.127	.717	.816	.947	.127	.351	.768
40	.040	.049	.060	.076	.098	.132	.732	.835	.971	.158	.361	.830
4 00	0.042	0.051	0.062	0.079	0.102	0.137	0.748	0.855	0.996	1.190	1.471	1.893
20	.043	.052	.064	.081	.106	.142	.764	.874	1.022	.225	.521	.966
40	.044	.053	.066	.084	.110	.148	.781	.894	.048	.260	.571	2.039
5 00	0.045	0.055	0.068	0.087	0.114	0.154	0.798	0.914	1.075	1.295	1.621	2.112
20	.046	.056	.070	.090	.118	.161	.816	.938	.105	.337	.679	.198
40	.047	.058	.072	.093	.122	.168	.835	.962	.135	.379	.739	.284
6 00	0.049	0.060	0.075	0.096	0.127	0.175	0.854	0.986	1.166	1.421	1.795	2.371
20	.050	.062	.079	.099	.132	.184	.875	1.012	.200	.468	.862	.474
40	.052	.064	.081	.103	.137	.193	.896	.038	.235	.515	.929	.578
7 00	0.054	0.066	0.083	0.107	0.143	0.202	0.917	1.064	1.270	1.562	1.997	2.682
20	.055	.068	.086	.111	.149	.211	.940	.094	.309	.617	2.076	.809
40	.057	.070	.089	.115	.155	.221	.964	.124	.340	.672	.156	.936
8 00	0.059	0.073	0.092	0.120	0.162	0.231	0.988	1.154	1.389	1.727	2.236	3.063
20	.061	.075	.095	.124	.169	.243	1.014	.188	.434	.791	.330	.216
40	.063	.077	.098	.129	.176	.255	.040	.222	.480	.855	.425	.369
— 9 00	0.065	0.080	0.102	0.134	0.184	0.267	1.067	1.257	1.526	1.919	2.520	3.522
20	.067	.083	.105	.140	.193	.281	.097	.296	.579	.994	.631	.712
40	.069	.086	.109	.146	.202	.296	.127	.336	.632	2.069	.743	.902

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Declination.	V hours.											
	$\Delta\alpha$						$\Delta\delta$					
	0m.	10m.	20m.	30m.	40m.	50m.	0m.	10m.	20m.	30m.	40m.	50m.
° ′	s.	s.	s.	s.	s.	s.	″	″	″	″	″	″
+10 00	0.046	0.059	0.077	0.104	0.146		0.741	0.892	1.107	1.427	1.923	
40	.047	.060	.079	.108	.152		.757	.914	.138	.474	.998	
20	.048	.062	.082	.112	.158		.774	.936	.170	.521	2.073	
9 00	0.050	0.064	0.085	0.116	0.164		0.791	0.959	1.202	1.569	2.149	
40	.051	.066	.088	.120			.809	.984	.238	.623		
20	.053	.068	.091	.124			.828	1.009	.274	.678		
8 00	0.055	0.070	0.094	0.129			0.847	1.035	1.310	1.733		
40	.056	.072	.097	.134			.867	.063	.351	.796		
20	.057	.074	.100	.139			.887	.091	.393	.859		
7 00	0.059	0.077	0.104	0.145			0.908	1.120	1.435	1.923		
40	.061	.079	.108	.151			.931	.152	.482	.998		
20	.063	.082	.112	.157			.954	.185	.530	2.073		
6 00	0.065	0.085	0.116	0.164			0.977	1.218	1.578	2.148		
40	.067	.088	.120				1.003	.254	.633			
20	.069	.091	.124				.029	.291	.688			
5 00	0.071	0.094	0.129				1.055	1.328	1.743			
40	.073	.097	.134				.084	.370	.807			
20	.076	.101	.139				.114	.412	.871			
4 00	0.079	0.105	0.145				1.144	1.455	1.935			
40	.081	.109	.151				.177	.504	2.010			
20	.084	.113	.157				.210	.553	.086			
3 00	0.087	0.117	0.164				1.244	1.602	2.162			
40	.090	.121					.282	.658				
20	.093	.126					.320	.714				
2 00	0.096	0.131					1.358	1.771				
40	.099	.136					.402	.836				
20	.103	.141					.446	.902				
+ 1 00	0.107	0.147					1.491	1.968				
40	.111	.153					.541	2.046				
20	.115	.159					.592	.124				
0 00	0.119	0.166					1.643	2.202				
20	.123						.701					
40	.128						.759					
— 1 00	0.133						1.818					
20	.138						.887					
40	.144						.956					
2 00	0.150						2.025					
20	.156											
40	.162											
— 3 00	0.169						2.270					

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Declination.	0 hour.											
	$\Delta\alpha$						$\Delta\delta$					
	0m.	10m.	20m.	30m.	40m.	50m.	0m.	10m.	20m.	30m.	40m.	50m.
° ′	s.	s.	s.	s.	s.	s.	″	″	″	″	″	″
—10 00	0.000	0.001	0.001	0.002	0.003	0.004	0.385	0.386	0.387	0.389	0.392	0.396
20	0	.001	.001	.002	.003	.004	.390	.391	.392	.394	.397	.401
40	0	.001	.001	.002	.003	.004	.396	.396	.398	.400	.403	.407
11 00	0	0.001	0.002	0.002	0.003	0.004	0.402	0.403	0.404	0.406	0.409	0.413
20	0	.001	.002	.002	.003	.004	.407	.408	.409	.412	.415	.419
40	0	.001	.002	.002	.003	.004	.413	.414	.415	.418	.421	.425
12 00	0	0.001	0.002	0.003	0.004	0.005	0.419	0.420	0.421	0.424	0.427	0.431
20	0	.001	.002	.003	.004	.005	.425	.425	.427	.429	.433	.437
40	0	.001	.002	.003	.004	.005	.431	.431	.433	.435	.439	.443
13 00	0	0.001	0.002	0.003	0.004	0.005	0.437	0.437	0.439	0.441	0.445	0.450
20	0	.001	.002	.003	.004	.005	.443	.443	.445	.448	.451	.456
40	0	.001	.002	.003	.004	.005	.449	.449	.451	.454	.458	.463
14 00	0	0.001	0.002	0.003	0.004	0.005	0.455	0.456	0.458	0.461	0.465	0.470
20	0	.001	.002	.003	.004	.005	.462	.463	.464	.467	.471	.476
40	0	.001	.002	.003	.004	.005	.469	.470	.471	.475	.479	.484
15 00	0	0.001	0.002	0.003	0.004	0.005	0.476	0.477	0.478	0.482	0.487	0.493
20	0	.001	.002	.003	.004	.006	.484	.485	.486	.490	.495	.501
40	0	.001	.002	.003	.004	.006	.492	.493	.494	.498	.503	.509
16 00	0	0.001	0.002	0.003	0.004	0.006	0.500	0.501	0.502	0.508	0.512	0.518
20	0	.001	.002	.003	.004	.006	.508	.510	.511	.516	.521	.527
40	0	.001	.002	.003	.004	.006	.517	.519	.520	.525	.530	.537
17 00	0	0.001	0.002	0.004	0.005	0.006	0.528	0.529	0.531	0.534	0.539	0.548
20	0	.001	.002	.004	.005	.006	.538	.538	.540	.544	.549	.556
40	0	.001	.002	.004	.005	.007	.548	.548	.550	.555	.560	.567
18 00	0	0.001	0.003	0.004	0.005	0.007	0.558	0.558	0.560	0.565	0.571	0.579
20	0	.001	.003	.004	.005	.007	.568	.568	.570	.575	.580	.588
40	0	.001	.003	.004	.006	.007	.578	.578	.581	.586	.591	.600
19 00	0	0.001	0.003	0.004	0.006	0.007	0.588	0.589	0.591	0.596	0.603	0.612
20	0	.001	.003	.004	.006	.008	.598	.599	.600	.607	.614	.622
40	0	.001	.003	.004	.006	.008	.610	.610	.611	.618	.625	.633
20 00	0	0.002	0.003	0.005	0.006	0.008	0.620	0.620	0.624	0.629	0.636	0.645
20	0	.002	.003	.005	.007	.008	.632	.634	.636	.641	.648	.657
40	0	.002	.003	.005	.007	.008	.645	.647	.649	.654	.661	.669
21 00	0	0.002	0.003	0.005	0.007	0.009	0.657	0.659	0.662	0.667	0.674	0.684
20	0	.002	.003	.005	.007	.009	.670	.672	.675	.680	.688	.698
40	0	.002	.003	.005	.007	.009	.684	.686	.689	.695	.702	.713
22 00	0	0.002	0.004	0.006	0.007	0.010	0.698	0.700	0.703	0.709	0.717	0.728
20	0	.002	.004	.006	.008	.010	.713	.715	.718	.724	.733	.744
40	0	.002	.004	.006	.008	.010	.728	.730	.733	.740	.748	.760
23 00	0	0.002	0.004	0.006	0.008	0.010	0.743	0.745	0.749	0.755	0.764	0.776
20	0	.002	.004	.006	.008	.011	.759	.762	.766	.772	.781	.793
40	0	.002	.004	.006	.009	.011	.776	.779	.783	.789	.798	.811
24 00	0	0.002	0.004	0.007	0.009	0.011	0.794	0.796	0.800	0.807	0.817	0.830
20	0	.002	.004	.007	.009	.011	.812	.814	.818	.825	.836	.859
40	0	.002	.004	.007	.009	.011	.831	.833	.837	.844	.856	.889
25 00	0	0.002	0.004	0.007	0.010	0.012	0.850	0.852	0.857	0.865	0.876	0.891
20	0	.002	.004	.007	.010	.012	.871	.873	.878	.886	.897	.913
40	0	.002	.004	.007	.010	.012	.892	.894	.899	.908	.919	.936
26 00	0	0.002	0.005	0.008	0.011	0.013	0.913	0.915	0.921	0.930	0.942	0.959
20	0	.002	.005	.008	.011	.013	.936	.938	.944	.953	.966	.984
40	0	.002	.005	.008	.011	.014	.960	.962	.968	.977	.991	1.009
27 00	0	0.003	0.006	0.008	0.012	0.015	0.984	0.986	0.992	1.002	1.017	1.036
20	0	.003	.006	.008	.012	.015	1.010	1.012	1.018	.028	.044	.064
40	0	.003	.006	.008	.012	.015	.037	.039	.045	.055	.072	.093
28 00	0	0.003	0.006	0.009	0.013	0.016	1.064	1.066	1.073	1.084	1.101	1.123
20	0	.003	.006	.009	.013	.016	.094	.096	.102	.114	.131	.155
40	0	.003	.006	.009	.013	.017	.124	.126	.133	.145	.163	.187
—29 00	0	0.003	0.007	0.010	0.014	0.018	1.154	1.157	1.165	1.177	1.196	1.221
20	0	.003	.007	.010	.014	.018	.188	.190	.199	.212	.231	.258
40	0.000	.003	.007	.010	.015	.019	.222	.224	.234	.248	.268	.296

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Declination.	I hour.											
	$\Delta\alpha$						$\Delta\delta$					
	0m.	10m.	20m	30m.	40m.	50m.	0m.	10m.	20m.	30m.	40m.	50m.
° ′	s.	s.	s.	s.	s.	s.	″	″	″	″	″	″
—10 00	0.005	0.006	0.007	0.008	0.009	0.010	0.401	0.406	0.413	0.422	0.432	0.444
20	.005	.006	.007	.008	.009	.011	.406	.411	.419	.428	.438	.450
40	.005	.006	.007	.008	.009	.011	.412	.418	.425	.434	.445	.457
11 00	0.005	0.006	0.007	0.008	0.010	0.011	0.418	0.423	0.432	0.441	0.452	0.464
20	.005	.006	.007	.009	.010	.011	.424	.429	.438	.447	.459	.471
40	.005	.006	.008	.009	.010	.012	.430	.435	.444	.454	.466	.478
12 00	0.006	0.007	0.008	0.009	0.010	0.012	0.437	0.442	0.451	0.461	0.473	0.486
20	.006	.007	.008	.009	.011	.012	.443	.449	.458	.468	.480	.494
40	.006	.007	.008	.009	.011	.012	.449	.456	.465	.475	.488	.502
13 00	0.006	0.007	0.008	0.010	0.011	0.013	0.456	0.463	0.473	0.483	0.496	0.511
20	.006	.007	.009	.010	.011	.013	.462	.470	.479	.489	.504	.519
40	.006	.007	.009	.010	.012	.013	.468	.477	.487	.497	.512	.528
14 00	0.006	0.008	0.009	0.010	0.012	0.014	0.475	0.485	0.495	0.505	0.520	0.537
20	.006	.008	.009	.011	.012	.014	.482	.492	.503	.514	.529	.546
40	.006	.008	.009	.011	.012	.014	.490	.500	.511	.522	.538	.556
15 00	0.007	0.008	0.009	0.011	0.013	0.015	0.499	0.510	0.521	0.533	0.547	0.566
20	.007	.008	.010	.011	.013	.015	.507	.517	.530	.544	.557	.576
40	.007	.008	.010	.011	.013	.015	.516	.528	.539	.553	.567	.586
16 00	0.007	0.009	0.010	0.012	0.014	0.016	0.525	0.537	0.549	0.560	0.578	0.597
20	.007	.009	.010	.012	.014	.016	.534	.546	.559	.573	.589	.608
40	.007	.009	.011	.012	.014	.016	.544	.555	.568	.583	.600	.619
17 00	0.008	0.009	0.011	0.012	0.014	0.017	0.555	0.565	0.578	0.592	0.612	0.631
20	.008	.010	.011	.013	.015	.017	.565	.576	.589	.604	.624	.644
40	.008	.010	.011	.013	.015	.018	.576	.587	.602	.617	.638	.657
18 00	0.008	0.010	0.012	0.014	0.016	0.018	0.588	0.599	0.613	0.629	0.651	0.671
20	.009	.010	.012	.014	.016	.019	.598	.609	.625	.641	.664	.683
40	.009	.010	.012	.015	.017	.019	.609	.721	.638	.654	.679	.698
19 00	0.009	0.011	0.013	0.015	0.017	0.020	0.621	0.634	0.652	0.667	0.691	0.711
20	.009	.011	.013	.015	.018	.021	.632	.645	.663	.680	.704	.728
40	.010	.011	.014	.016	.018	.021	.644	.657	.675	.694	.718	.745
20 00	0.010	0.012	0.014	0.016	0.019	0.022	0.656	0.670	0.687	0.708	0.732	0.763
20	.010	.012	.014	.017	.020	.022	.669	.684	.701	.722	.748	.779
40	.010	.012	.015	.017	.020	.023	.683	.697	.716	.738	.764	.798
21 00	0.011	0.013	0.015	0.018	0.021	0.024	0.697	0.712	0.731	0.754	0.781	0.804
20	.011	.013	.016	.018	.021	.024	.712	.727	.747	.770	.799	.835
40	.011	.014	.016	.018	.022	.025	.727	.742	.763	.786	.817	.852
22 00	0.012	0.014	0.017	0.019	0.022	0.026	0.742	0.758	0.780	0.804	0.836	0.873
20	.012	.014	.017	.020	.023	.026	.758	.775	.798	.823	.856	.893
40	.012	.015	.018	.020	.024	.027	.775	.792	.816	.844	.876	.914
23 00	0.013	0.015	0.018	0.021	0.025	0.028	0.792	0.811	0.835	0.864	0.897	0.937
20	.013	.016	.019	.022	.025	.029	.810	.829	.855	.884	.919	.971
40	.014	.016	.019	.022	.026	.030	.829	.849	.875	.906	.942	.995
24 00	0.014	0.016	0.020	0.022	0.027	0.031	0.848	0.869	0.896	0.928	0.965	1.019
20	.014	.016	.020	.023	.027	.032	.868	.890	.917	.951	.990	.043
40	.015	.017	.021	.024	.028	.033	.889	.912	.940	.974	1.016	.068
25 00	0.015	0.018	0.021	0.025	0.029	0.034	0.911	0.935	0.963	0.999	1.042	1.093
20	.016	.018	.022	.026	.030	.035	.934	.958	.988	1.025	.070	.123
40	.016	.019	.023	.027	.032	.037	.957	.983	1.014	.052	.099	.154
26 00	0.017	0.020	0.024	0.028	0.033	0.038	0.981	1.008	1.040	1.081	1.130	1.188
20	.017	.020	.024	.029	.034	.039	1.006	.035	.067	.110	.162	.223
40	.018	.021	.025	.030	.035	.041	.032	.062	.096	.141	.195	.259
27 00	0.018	0.022	0.026	0.031	0.036	0.042	1.060	1.091	1.126	1.173	1.230	1.296
20	.019	.022	.027	.032	.037	.043	.089	.121	.158	.207	.266	.336
40	.020	.023	.028	.033	.038	.045	.119	.152	.192	.242	.304	.377
28 00	0.020	0.024	0.029	0.034	0.039	0.046	1.150	1.185	1.226	1.279	1.343	1.419
20	.021	.025	.030	.035	.041	.048	.183	.220	.264	.318	.386	.465
40	.021	.026	.031	.037	.043	.050	.217	.256	.302	.359	.430	.512
—29 00	0.022	0.027	0.032	0.038	0.045	0.052	1.252	1.292	1.342	1.401	1.475	1.562
20	.023	.028	.033	.039	.047	.054	.289	.332	.383	.446	.524	.615
40	.024	.029	.035	.041	.048	.056	.329	.374	.427	.493	.575	.672

Hosted by Google

Declination.	II hours.											
	Δα						Δδ					
	0m.	10m.	20m.	30m	40m.	50m.	0m.	10m	20m.	30m.	40m.	50m.
° ′	s.	s.	s.	s.	s.	s.	″	″	″	″	″	″
—10 00	0.012	0.013	0.015	0.017	0.020	0.022	0.457	0.474	0.492	0.516	0.542	0.574
20	.012	.014	.016	.018	.020	.023	.464	.481	.500	.524	.551	.584
40	.012	.014	.016	.018	.021	.024	.471	.489	.508	.533	.561	.595
11 00	0.013	0.014	0.016	0.019	0.021	0.024	0.479	0.497	0.517	0.542	0.571	0.606
20	.013	.015	.016	.019	.022	.025	.487	.505	.526	.551	.581	.618
40	.013	.015	.017	.019	.022	.026	.495	.513	.535	.561	.592	.630
12 00	0.013	0.016	0.018	0.020	0.023	0.026	0.503	0.522	0.544	0.571	0.603	0.642
20	.014	.016	.018	.020	.023	.027	.511	.531	.554	.581	.614	.655
40	.014	.016	.019	.021	.024	.028	.520	.540	.564	.592	.626	.668
13 00	0.015	0.017	0.019	0.022	0.025	0.028	0.529	0.549	0.574	0.603	0.638	0.681
20	.015	.017	.019	.022	.025	.029	.538	.559	.585	.615	.651	.697
40	.015	.017	.020	.023	.026	.030	.548	.569	.596	.627	.664	.713
14 00	0.016	0.018	0.020	0.023	0.027	0.031	0.557	0.580	0.607	0.639	0 678	0.730
20	.016	.018	.021	.024	.027	.032	.567	.591	.619	.652	.692	.746
40	.016	.019	.021	.024	.028	.032	.577	.601	.631	.665	.706	.762
15 00	0.017	0.019	0.022	0.025	0.029	0.033	0.589	0.613	0.643	0.678	0.721	0.778
20	.017	.019	.022	.026	.029	.034	.598	.625	.656	.692	.737	.796
40	.018	.020	.023	.026	.030	.035	.610	.637	.669	.707	.753	.814
16 00	0.018	0.021	0.024	0.027	0.031	0.036	0.621	0.650	0.682	0.722	0.769	0.833
20	.018	.021	.024	.028	.032	.037	.633	.663	.696	.737	.786	.849
40	.019	.022	.025	.028	.033	.038	.646	.676	.710	.752	.803	.865
17 00	0.020	0.022	0.025	0.029	0.034	0.039	0.659	0.689	0.725	0.767	0.821	0.882
20	.020	.022	.026	.030	.035	.040	.672	.703	.741	.785	.840	.905
40	.020	.023	.027	.031	.036	.041	.686	.718	.757	.803	.860	.928
18 00	0.021	0.024	0.028	0.032	0.037	0.043	0.700	0.733	0.773	0.822	0.880	0.952
20	.021	.024	.028	.033	.038	.044	.715	.749	.791	.841	.902	.977
40	.022	.025	.029	.034	.039	.045	.730	.766	.809	.861	.924	1.002
19 00	0.023	0.026	0.030	0.035	0.040	0.046	0.745	0.783	0.827	0.881	0.946	1.028
20	.023	.027	.031	.036	.041	.048	.763	.801	.847	.903	.971	.056
40	.024	.028	.032	.037	.042	.050	.781	.820	.867	.925	1.006	.084
20 00	0.025	0.029	0.033	0.038	0.044	0.052	0.799	0.839	0.887	0.947	1.021	1.112
20	.025	.029	.034	.039	.045	.053	.817	.858	.909	.972	.049	.144
40	.026	.030	.035	.040	.047	.055	.835	.878	.932	.997	.077	.176
21 00	0.027	0.031	0.036	0.042	0.049	0.057	0.853	0.898	0.954	1.022	1.106	1.209
20	.028	.032	.037	.043	.050	.059	.873	.919	.975	.050	.137	.245
40	.029	.033	.038	.044	.052	.061	.894	.940	.997	.078	.168	.282
22 00	0.030	0.034	0.040	0.046	0.054	0.063	0.915	0.962	1.029	1.106	1.200	1.319
20	.031	.035	.041	.047	.055	.065	.938	.989	.057	.138	.236	.361
40	.032	.036	.042	.049	.057	.067	.961	1.016	.086	.170	.273	.404
23 00	0.033	0.038	0.044	0.051	0.059	0.070	0.985	1.044	1.115	1.202	1.310	1.447
20	.034	.039	.045	.052	.061	.072	1.011	.073	.147	.238	.351	.494
40	.035	.040	.046	.054	.063	.075	.038	.102	.180	.274	.393	.541
24 00	0.036	0.042	0.048	0.056	0.066	0.078	1.065	1.132	1.213	1.311	1.436	1.589
20	.037	.043	.049	.058	.068	.081	.094	.163	.245	.350	.483	.615
40	.039	.044	.051	.060	.070	.084	.124	.196	.281	.393	.533	.703
25 00	0.040	0.046	0.053	0.062	0.073	0.088	1.155	1.231	1.319	1.438	1.586	1.765
20	.041	.047	.055	.064	.076	.091	.187	.267	.358	.484	.640	.829
40	.042	.049	.057	.067	.079	.095	.221	.305	.400	.532	.696	.896
26 00	0.044	0.051	0.059	0.070	0.083	0.099	1.257	1.344	1.445	1.583	1.757	1.967
20	.045	.053	.061	.072	.087	.103	.295	.386	.491	.636	.820	2.042
40	.046	.055	.063	.075	.090	.107	.325	.430	.542	.692	.886	2.122
27 00	0.048	0.056	0.066	0.078	0.094	0.112	1.377	1.476	1.594	1.753	1.957	2.205
20	.050	.058	.068	.081	.098	.117	.420	.523	.648	.816	2.032	.294
40	.052	.060	.071	.084	.102	.122	.465	.575	.704	.883	2.112	.390
28 00	0.054	0.063	0.074	0.088	0.107	0.128	1.513	1.627	1.763	1.954	2.195	2.491
20	.056	.065	.077	.092	.111	.134	.563	.683	.826	2.029	.282	.598
40	.058	.068	.080	.096	.116	.140	.617	.741	.892	2.107	.374	.714
— 29 00	0.061	0.071	0.084	0.100	0.122	0.147	1.673	1.803	1.964	2.190	2.468	2.837
20	.063	.074	.087	.104	.128	.154	.731	.870	2.038	2.278	.575	2.967
40	.065	0.077	.091	.109	.134	.161	1.792	1.941	2.118	2.372	2.692	3.106

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Declination.	III hours.											
	Δα						Δδ					
	0m.	10m.	20m.	30m.	40m.	50m.	0m.	10m.	20m.	30m.	40m.	50m.
° ′	s.	s.	s.	s.	s.	s.	″	″	″	″	″	″
—10 00	0.026	0.030	0.035	0.041	0.048	0.059	0.612	0.659	0.716	0.788	0.880	0.999
20	.027	.031	.036	.042	.050	.061	.624	.673	.732	.807	.901	1.026
40	.027	.032	.037	.044	.051	.063	.636	.687	.748	.826	.923	.053
11 00	0.028	0.033	0.038	0.045	0.052	0.064	0.648	0.700	0.765	0.845	0.946	1.080
20	.029	.033	.039	.046	.054	.067	.661	.715	.782	.865	.970	.110
40	.030	.034	.040	.047	.056	.069	.674	.730	.799	.885	1.005	.141
12 00	0.030	0.035	0.041	0.049	0.057	0.071	0.688	0.745	0.816	0.905	1.020	1.172
20	.031	.036	.042	.050	.059	.073	.703	.761	.835	.928	.047	.206
40	.032	.037	.043	.052	.061	.075	.718	.778	.854	.950	.075	.241
13 00	0.033	0.038	0.044	0.053	0.063	0.078	0.733	0.795	0.874	0.974	1.104	1.276
20	.034	.039	.046	.055	.065	.081	.749	.813	.895	1.000	.136	.316
40	.035	.040	.047	.057	.067	.083	.765	.832	.917	.026	.168	.356
14 00	0.035	0.041	0.049	0.058	0.070	0.086	0.781	0.851	0.939	1.053	1.200	1.397
20	.036	.043	.050	.060	.073	.089	.799	.872	.963	.082	.235	.443
40	.037	.044	.052	.062	.075	.092	.817	.894	.988	.121	.271	.489
15 00	0.038	0.045	0.053	0.064	0.078	0.094	0.835	0.916	1.013	1.140	1.307	1.536
20	.039	.046	.055	.067	.081	.097	.855	.939	.040	.173	.349	.589
40	.041	.048	.057	.069	.083	.100	.875	.962	.068	.207	.391	.642
16 00	0.042	0.049	0.058	0.071	0.086	0.103	0.896	0.985	1.096	1.241	1.434	1.696
20	.043	.051	.060	.073	.089	.108	.918	1.009	.127	.274	.482	.758
40	.044	.051	.062	.076	.092	.113	.941	.033	.158	.307	.530	.820
17 00	0.046	0.054	0.064	0.078	0.095	0.119	0.964	1.057	1.190	1.340	1.579	1.882
20	.047	.055	.066	.080	.098	.124	.989	.089	.226	.388	.634	.957
40	.048	.057	.068	.083	.102	.129	1.015	.121	.262	.437	.690	2.032
18 00	0.050	0.059	0.071	0.086	0.106	0.135	1.041	1.153	1.298	1.486	1.746	2.107
20	.051	.061	.073	.089	.110	.141	.069	.187	.338	.538	.812	.194
40	.053	.063	.076	.092	.115	.147	.098	.221	.379	.590	.878	.282
19 00	0.055	0.065	0.079	0.096	0.120	0.153	1.127	1.256	1.420	1.642	1.944	2.370
20	.057	.067	.082	.100	.125	.160	.159	.295	.468	.702	2.018	.474
40	.059	.070	.085	.104	.130	.167	.192	.334	.516	.762	.093	.578
20 00	0.061	0.073	0.088	0.108	0.136	0.175	1.225	1.373	1.565	1.822	2.168	2.683
20	.063	.075	.091	.112	.142	.184	.263	.418	.619	.891	.263	.810
40	.065	.078	.094	.117	.148	.193	.301	.463	.673	.961	.358	.937
21 00	0.067	0.081	0.098	0.122	0.154	0.202	1.340	1.508	1.728	2.031	2.453	3.064
20	.069	.084	.102	.127	.161	.211	.383	.560	.794	.115	.563	
40	.072	.087	.106	.132	.169	.221	.426	.612	.861	.199	.673	
22 00	0.075	0.090	0.110	0.138	0.177		1.469	1.665	1.928	2.283	2.784	
20	.078	.093	.115	.144	.186		.519	.726	2.005	.380	.918	
40	.081	.097	.120	.150	.195		.570	.787	.082	.478	3.053	
23 00	0.084	0.101	0.125	0.157	0.204		1.621	1.849	2.159	2.576	3.188	
20	.087	.105	.130	.164	.213		.679	.921	.251	.694		
40	.090	.109	.136	.172			.737	.993	.343	.813		
24 00	0.094	0.114	0.143	0.180			1.796	2.065	2.435	2.932		
20	.098	.119	.150	.190			.860	.144	.540	3.069		
40	.102	.124	.157	.200			.929	.229	.658	.218		
25 00	0.106	0.130	0.164	0.210			2.003	2.322	2.772	3.377		
20	.110	.136	.172				.078	.418	.894			
40	.115	.142	.180				.158	.521	3.024			
26 00	0.120	0.149	0.189				2.248	2.631	3.166			
20	.125	.156	.199				.339	.744	.317			
40	.131	.163					.438	.867				
27 00	0.137	0.171					2.543	3.002				
20	.143	.179					.653	.140				
40	.150	.188					.769	.290				
28 00	0.158	0.199					2.896	3.456				
20	.166						3.031	.631				
40	.174						.174					
29 00	0.183						3.328					
20	0.193						.491					
40	0.204						.667					

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MEAN PLACES OF THE STARS

WHICH HAVE BEEN COMPARED WITH

ASTEROIDS AND COMETS,

IN OBSERVATIONS WITH THE EQUATORIAL INSTRUMENT; DERIVED FROM OBSERVATIONS WITH THE MERIDIAN INSTRUMENTS

OF THE

UNITED STATES NAVAL OBSERVATORY,

WASHINGTON.

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0 hour.

Number.	STAR.	Magnitude.	1850. α	1850. δ	1860. α	1860. δ	ASTEROIDS AND COMETS—COMPARED.
			m. s.	° ′ ″	m. s.	° ′ ″	
1	Weisse XXIII, 1212	9	- - -	—11 57 51.46	- - -	- - - -	Flora, 50.
2	Weisse XXIII, 1227	9	- - -	—11 52 5.06	- - -	- - - -	Flora, 50.
3	Weisse XXIII, 1251	8	- - -	+ 5 46 54.60	- - -	- - - -	Hygea, 51.
4	Weisse XXIII, 1258	8	- - -	- - - -	1 37.70	+ 4 19 4.08	Hygea, 51.
5	Weisse XXIII, 1260	8	- - -	- - - -	1 38.28	+ 4 21 41.25	Hygea, 51.
6	Weisse XXIII, 1267	7	- - -	- - - -	1 41.95	— 0 5 12.97	Massilia, 52. Mnemosyne, 59.
7	Weisse XXIII, 1269	8	- - -	- - - -	1 44.96	+12 1 34.95	Iris, 51.
8	Weisse O, 4	8	- - -	- - - -	1 57.84	12 1 56.75	Iris, 51.
9	Weisse O, 13	8.5	- - -	—11 1 21.54	- - -	- - - -	Flora, 50.
10	Weisse O, 28	9	2 23.07	— 9 48 34.78	- - -	- - - -	Flora, 50.
11	Weisse O, 41	9	- - -	—10 7 32.39	- - -	- - - -	Flora, 50.
12	Santini, 8	7	- - -	+ 8 18 21.61	4 36.58	8 21 43.06	Encke's Comet, 52.
13	Weisse O, 83	9	- - -	+ 5 20 32.69	- - -	- - - -	Victoria, 50.
14	Weisse O, 89	9	- - -	- - - -	- - -	6 7 1.11	Hygea, 51.
15	Weisse O, 102	9	- - -	—12 8 18.84	- - -	- - - -	Flora, 51.
16	Weisse O, 104	9	- - -	- - - -	6 54.62	6 6 1.40	Hygea, 51.
17	Weisse O, 110	9	- - -	- - - -	7 18.43	- - - -	Pandora, 58.
18	Weisse O, 112	9	- - -	- - - -	- - -	2 35 8.93	Fides, 55.
19	Santini, 10	8	- - -	- - - -	8 26.99	5 3 55.84	Hygea, 51.
20	Weisse O, 172	8	- - -	- - - -	- - -	— 6 55 52.31	Thetis, 57.
21	Weisse O, 189	8	11 9.19	+11 46 54.00	- - -	- - - -	Flora, 50.
22	Weisse O, 192	9	- - -	+ 6 26 55.24	11 55.47	+ 6 30 16.37	Hygea, 51.
23	Weisse O, 196	9	- - -	- - - -	12 8.25	- - - -	Pandora, 58.
24	Weisse O, 199	7	11 56.87	— 8 3 7.90	- - -	- - - -	Flora, 50.
25	Weisse O, 202	9	- - -	- - - -	12 39.48	12 36 56.89	Iris, 51.
26	Weisse O, 210	9	- - -	+ 5 27 32.60	- - -	- - - -	Victoria, 50.
27	Weisse O, 212	8.5	- - -	- - - -	12 58.51	- - - -	Pandora, 58.
28	B. A. C., 66	5.5	- - -	7 21 24.66	- - -	- - - -	Hygea, 51.
29	Weisse O, 229	7	- - -	+11 56 20.07	13 45.84	11 59 42.06	Iris, 51.
30	Weisse O, 233	9	- - -	- - - -	- - -	11 56 12.15	Iris, 51.
31	Weisse O, 236	7	- - -	- - - -	15 5.67	— 5 58 5.61	Thetis, 57.
32	Weisse O, 239	9	- - -	—11 30 59.60	- - -	- - - -	Flora, 50.
33	Weisse O, 287	8.5	- - -	- - - -	17 22.40	- - - -	Pandora, 58.
34	B. A. C., 89	6	- - -	- - - -	18 28.99	+ 6 55 0.24	Iris, 51.
35	Weisse O, 312	7	- - -	- - - -	- - -	3 3 0.18	Fides, 55.
36	Weisse O, 376	9	- - -	- - - -	23 19.68	+ 2 29 34.50	Pandora, 58.
37	Weisse O, 421	8	25 0.03	— 9 51 44.35	- - -	- - - -	Flora, 50.
38	B. A. C., 129	6.5	- - -	+ 6 7 34.33	25 10.45	- - - -	Pandora, 58. Victoria, 51.
39	Weisse O, 434	7	- - -	- - - -	- - -	— 4 37 15.85	Thetis, 57.
40	Weisse O, 436	9	- - -	+ 8 56 33.17	26 14.44	- - - -	Encke's Comet, 52.
41	Weisse O, 437	8	- - -	- - - -	- - -	— 4 48 53.80	Thetis, 57.
42	Weisse O, 443	8	- - -	- - - -	26 42.81	+ 2 32 52.24	Pandora, 58.
43	Weisse O, 444	9	- - -	— 9 32 48.90	- - -	- - - -	Flora, 50.
44	Weisse O, 450	8	- - -	- - - -	- - -	5 11 4.69	Encke's Comet, 52.
45	Santini, 31	7	- - -	- - - -	26 55.49	- - - -	Encke's Comet, 52.
46	Weisse O, 476	9	- - -	- - - -	28 16.13	7 22 32.03	Encke's Comet, 52.
47	Weisse O, 491	8	- - -	+ 8 2 53.90	- - -	- - - -	Encke's Comet, 52.
48	Weisse O, 496	8	- - -	- - - -	29 43.86	4 38 28.07	Fides, 56.
49	Lalande, 967	8	- - -	- - - -	30 48.93	1 59 34.93	Comet, 1855, II, 55.
50	Weisse O, 560	8	32 46.77	— 8 28 38.24	- - -	- - - -	Flora, 50.
51	B. A. C, 177	7	- - -	+ 8 32 6.52	33 57.90	- - - -	Hygea, 51.
52	Weisse O, 595	9	- - -	- - - -	34 49.64	- - - -	Pandora, 58.
53	Weisse O, 601	9	- - -	— 3 52 27.47	- - -	- - - -	Flora, 50.
54	Weisse O, 608	9	- - -	- - - -	35 31.62	3 1 25.71	Pandora, 58.
55	Weisse O, 635	8	- - -	+ 6 57 3.62	37 5.24	- - - -	Victoria, 51.
56	Weisse O, 638	9	- - -	- - - -	37 11.70	7 3 24.37	Victoria, 51.
57	Weisse O, 641	9	- - -	— 6 26 52.84	- - -	- - - -	Flora, 50.
58	Weisse O, 647	8	- - -	+ 4 21 35.30	37 51.45	4 24 63.93	Massilia, 53. Euphrosyne, 54.
59	Weisse O, 657	8	- - -	+ 7 1 24.13	38 25.62	- - - -	Victoria, 51.
60	Weisse O, 678	9	- - -	- - - -	- - -	+ 1 35 30.62	Virginia, 57.

NOTE.—B. A. C. signifies British Association Catalogue. B. Z., Bessel's Zones. A. Z, Argelander's Zones. G. 12 Y., Greenwich 12-Year Catalogue. Σ. Cat. G., Struve's Catalogue Generalis. A. C., Oeltzen's Catalogue of Argelander's Zones. (*) W., Stars of comparison determined from observations at the Washington United States Naval Observatory.

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0 hour—Continued.

Number.	STAR.	Magnitude.	1850. α	1850. δ	1860. α	1860. δ	ASTEROIDS AND COMETS—COMPARED.
			m. s.	° ′ ″	m. s.	° ′ ″	
61	Weisse O, 680	9	- - -	- - - -	39 38.36	+ 7 32 30.85	Victoria, 57.
62	Lalande, 967	8	- - -	- - - -	39 48.93	- - - -	Comet 1855, II, 55.
63	B. A. C, 216	7	- - -	- - - -	- - -	+ 5 58 33.59	Fides, 56.
64	Weisse O, 687	9	- - -	- - - -	40 2.20	— 1 55 15.07	Metis, 53.
65	B. A. C, 221	6	- - -	- - - -	41 2.42	+ 4 33 37.41	Euphrosyne, 54.
66	Weisse O, 771	9	- - -	+ 3 19 20.61	41 8.66	+ 3 22 45.24	Euphrosyne, 54. Pandora, 58.
67	B. A. C, 230	6	- - -	- - - -	42 23.62	- - - -	Egeria, 58.
68	Weisse O, 732	7	- - -	- - - -	42 44.81	— 0 59 14.60	Metis, 53.
69	Weisse O, 742	9	- - -	- - - -	43 14.15	+ 6 20 43.38	Fides, 56.
70	Rumker, 340	8	- - -	- - - -	- - -	1 59 0.73	Virginia, 57.
71	B. A. C., 237	9	- - -	- - - -	- - -	2 37 29.62	Virginia, 57.
72	Weisse O, 775	9	- - -	- - - -	44 43.00	3 17 53.38	Pandora, 58.
73	Weisse O, 802	9	- - -	- - - -	- - -	2 32 31.96	Virginia, 57.
74	Weisse O, 806	9	- - -	+ 1 5 41.23	46 27.47	1 8 58.45	Egeria, 54.
75	Weisse O, 808	9	- - -	- - - -	- - -	6 30 54.93	Fides, 56.
76	B. A. C., 243	8	- - -	- - - -	46 7.03	+ 3 19 24.39	Pandora, 58.
77	Weisse O, 815	9	- - -	— 2 19 1.55	48 4.38	— 2 15 45.71	Metis, 53.
78	Weisse O, 820	9	- - -	- - - -	48 37.11	— 1 33 11.37	Flora, 51.
79	Weisse O, 893	9	- - -	- - - -	51 50.03	+ 1 54 9.62	Egeria, 54.
80	Weisse O, 902	9	- - -	- - - -	- - -	2 19 38.88	Virginia, 57.
81	Rumker, 451	9.5	- - -	- - - -	- - -	3 13 18.09	Virginia, 57.
82	Weisse O, 908	9	- - -	— 2 8 13.06	52 26.37	- - - -	Metis, 53.
83	Weisse O, 912	9	- - -	- - - -	- - -	2 32 49.89	Virginia, 57.
84	Weisse O, 918	8.5	- - -	- - - -	- - -	1 52 38.29	Egeria, 54.
85	Weisse O, 928	7	- - -	- - - -	- - -	4 4 44.26	———, 57.
86	Weisse O, 965	7	- - -	+ 8 19 33.36	55 24.40	- - - -	Euphrosyne, 55. Victoria, 51.
87	(♃ 81) W.	9.5	- - -	- - - -	- - -	3 39 45.48	Virginia, 57.
88	Weisse O, 979	8	- - -	- - - -	- - -	2 30 11.01	Virginia, 57.
89	Weisse O, 1013	8	- - -	- - - -	58 6.76	7 34 54.67	Fides, 56.
90	B. A. C., 311	7	- - -	- - - -	58 34.69	4 9 43.58	Virginia, 57.
91	Weisse O, 1033	9	- - -	- - - -	59 5.46	- - - -	Euphrosyne, 54.
92	Weisse O, 1048	9	- - -	- - - -	- - -	+ 3 3 42.87	Virginia, 57.

I hour.

93	Weisse O, 1076	9	- - -	- - - -	1 3.43	- - - -	Euphrosyne, 55.
94	Weisse O, 1078	9	- - -	- - - -	1 8.29	+ 8 38 7.24	Fides, 56.
95	B. A. C., 328	5	- - -	- - - -	1 9.63	4 54 31.16	Egeria, 55.
96	Weisse O, 1079	9	- - -	- - - -	1 10.99	- - - -	Euphrosyne, 55.
97	Lamont, 3059	9	- - -	— 1 47 31.71	- - -	- - - -	Metis, 53.
98	Rumker, 538	8.5	- - -	- - - -	- - -	+ 3 41 1.85	Virginia, 57.
99	B. A. C., 368	4.5	- - -	- - - -	6 25.20	- - - -	Egeria, 55.
100	Weisse I, 100	8	- - -	+ 8 56 46.68	7 31.52	- - - -	Victoria, 51.
101	B. A. C., 374	6	- - -	- - - -	7 39.28	— 1 43 25.51	Euphrosyne, 54.
102	Weisse I, 104	7	- - -	— 1 46 38.96	- - -	- - - -	Metis, 53.
103	Weisse I, 113	7.5	- - -	+ 8 59 20.56	8 27.43	+ 9 2 31.01	Victoria, 51. Fides, 56.
104	Weisse I, 138	7.5	- - -	- - - -	- - -	1 16 32.54	Flora, 51.
105	Rumker, 572	8	- - -	- - - -	- - -	+ 4 18 57.17	Virginia, 57.
106	B. A. C., 400	6	- - -	— 1 17 53.44	- - -	— 1 14 41.87	Metis, 53.
107	Weisse I, 197	9	- - -	- - - -	13 7.36	+ 1 25 7.94	Flora, 51.
108	Weisse I, 202	7	- - -	4 2 8.64	13 28.23	— 3 58 58.48	Egeria, 54.
109	Weisse I, 206	8	- - -	— 2 5 55.76	- - -	— 2 2 46.81	Euphrosyne, 54.
110	Weisse I, 299	8	- - -	+ 9 37 29.27	18 35.88	- - - -	Victoria, 51.
111	Weisse I, 313	8.5	- - -	- - - -	- - -	+10 10 10.57	Fides, 56.
112	Weisse I, 336	9	- - -	8 2 57.68	- - -	8 3 7.63	———, 53.
113	(♃ 61) W	9.5	- - -	- - - -	- - -	+ 8 18 14.36	Massilia, 53.
114	Weisse I, 375	8.5	- - -	- - - -	22 42.56	— 0 21 1.57	Metis, 53.
115	B. A. C., 448	5.5	- - -	- - - -	- - -	+ 5 25 15.88	Virginia, 57.
116	Weisse I, 382	9	- - -	10 18 50.66	22 55.36	- - - -	Victoria, 51.
117	Weisse I, 410	8	- - -	+ 9 12 52.04	- - -	+ 9 16 1.06	Massilia, 53.
118	Weisse I, 414	9	- - -	- - - -	- - -	+10 58 26.78	Fides, 56.
119	Weisse I, 432	9	- - -	— 2 25 33.57	- - -	- - - -	Euphrosyne, 54.
120	Weisse I, 441	9	- - -	— 2 33 47.76	- - -	— 2 35 4.85	Euphrosyne, 54.

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I hour—Continued.

Number.	STAR.	Magnitude.	1850. α	1850. δ	1860. α	1860. δ	ASTEROIDS AND COMETS—COMPARED.
			m. s.	° ′ ″	m. s.	° ′ ″	
121	Weisse I, 450	9	- - -	— 2 38 13.94	- - -	- - - -	Euphrosyne, 54.
122	Rumker, 753	8.5	- - -	- - - -	- - -	+ 6 2 38.77	Virginia, 58.
123	Weisse I, 497	8.5	- - -	+ 3 1 5.39	29 11.59	- - - -	Parthenope, 51.
124	Santini, 91	7.5	- - -	- - - -	31 6.63	1 52 20.24	Parthenope, 51.
125	Weisse I, 501	6	- - -	11 22 21.44	- - -	- - - -	Egeria, 50.
126	Weisse I, 540	9	- - -	- - - -	31 42.02	3 24 37.55	Parthenope, 51.
127	Weisse I, 539	8.9	- - -	11.40 30.58	31 44.40	+11 43 36.37	Fides, 56. Egeria, 50.
128	Weisse I, 562	8.5	- - -	+ 2 41 30.93	32 29.45	- - - -	Parthenope, 51.
129	Weisse I, 569	9.5	- - -	- - - -	32 54.25	- - - -	Victoria, 51.
130	Weisse I, 582	9	- - -	— 2 21 48.72	- - -	- - - -	Euphrosyne, 54.
131	Weisse I, 600	9	- - -	- - - -	33 50.80	+ 9 24 10.07	Massilia, 53.
132	Weisse I, 598	9	- - -	- - - -	33 52.56	9 24 24.02	Massilia, 53.
133	Weisse I, 607	9	- - -	- - - -	34 4.49	3 47 10.53	Parthenope, 51.
134	Weisse I, 646	8.5	- - -	+12 11 53.53	35 46.50	- - - -	Egeria, 51.
135	Weisse I, 628	9.5	- - -	- - - -	35 56.14	3 43 21.16	Parthenope, 51.
136	Weisse I, 675	8.5	- - -	+ 1 51 37.54	37 6.73	- - - -	Parthenope, 51.
137	Lalande, 3237	8	- - -	— 2 40 46.47	- - -	- - - -	Euphrosyne, 54.
138	Weisse I, 713	9	- - -	- - - -	39 55.87	10 15 9.66	Massilia, 53.
139	Weisse I, 732	9	- - -	+13 18 52.86	- - -	13 21 54.19	Egeria, 51.
140	B. A. C, 551	6.5	- - -	+ 2 56 5.79	41 10.90	+ 2 59 7.19	Astræa, 53.
141	Weisse I, 740	9	- - -	- - - -	41 42.47	+11 41 31.45	Victoria, 51.
142	Weisse I, 767	7.5	- - -	+10 17 55.02	43 26.39	- - - -	Massilia, 53.
143	Weisse I, 775	9	- - -	- - - -	43 44.07	14 3 36.46	Egeria, 51.
144	Weisse I, 790	8	- - -	— 3 22 52.86	44 29.92	- - - -	Egeria, 54.
145	Weisse I, 808	9	- - -	2 46 15.99	45 27.40	- - - -	Euphrosyne, 54.
146	Weisse I, 807	9	- - -	- - - -	45 31.44	14 11 14.06	Egeria, 51.
147	Weisse I, 821	9	- - -	— 2 54 42.90	- - -	- - - -	Euphrosyne, 54.
148	B. A. C., 574	5.5	- - -	- - - -	46 18.62	2 29 41.51	Parthenope, 51. Astræa, 53.
149	Weisse I, 847	8	- - -	2 39 15.11	47 32.43	2 42 13.79	Astræa, 53. Parthenope, 51.
150	Weisse I, 855	9	- - -	+11 50 8.43	48 9.50	+11 53 6.77	Victoria, 51.
151	Weisse I, 860	9	- - -	- - - -	48 20.96	+ 2 53 25.30	Astræa, 53.
152	B. A. C., 598	7	- - -	— 2 47 35.80	50 52.55	— 2 44 37.63	Egeria, 54. Euphrosyne, 54.
153	Weisse I, 896	8	- - -	+15 11 49.51	51 3.77	- - - -	Egeria, 51.
154	Weisse I, 969	9	- - -	- - - -	- - -	+11 30 13.89	Massilia, 53.
155	Weisse I, 943	8.5	- - -	- - - -	53 17.60	12 42 17.47	Victoria, 51.
156	Weisse I, 963	9	- - -	- - - -	54 23.06	3 22 28.26	Parthenope, 51.
157	Weisse I, 972	7	- - -	- - - -	- - -	12 0 33.96	Massilia, 53.
158	Weisse I, 973	7	- - -	12 45 3.80	55 3.18	- - - -	Victoria, 51.
159	Weisse I, 978	7	- - -	- - - -	55 10.94	+ 8 24 18.35	Circe, 57.
160	Weisse I, 984	9	- - -	+ 3 7 18.09	55 25.45	- - - -	Astræa, 53.
161	B. A. C., 641	7	- - -	- - - -	57 28.19	+ 7 3 47.98	Parthenope, 51.
162	Weisse I, 1038	9	- - -	- - - -	- - -	8 46 6.79	Circe, 57.
163	Weisse I, 1040	7	- - -	- - - -	58 48.74	7 34 43.74	Parthenope, 51.
164	B. Z., 394, 164	8.5	- - -	+16 21 57.89	58 56.27	- - - -	Egeria, 51.
165	Weisse I, 1042	7.5	- - -	- - - -	58 56.88	+12 47 32.15	Victoria, 51.
166	Weisse I, 1047	9	- - -	- - - -	59 20.20	- - - -	Fides, 56.
167	Weisse I, 1056	9	- - -	- - - -	59 30.40	- - - -	Astræa, 53.

II hours.

168	Weisse I, 1071	8	- - -	- - - -	- - -	+ 8 10 37.31	Circe, 57.
169	Weisse I, 1080	7	- - -	- - - -	- - -	8 11 0.96	Circe, 57.
170	B. A. C., 663	6.5	- - -	- - - -	- - -	+ 3 34 4.00	Astræa, 53.
171	Weisse II, 7	8	- - -	+ 3 31 12.28	2 22.52	- - - -	Parthenope, 51.
172	A. Z., 145, 126	8.5	- - -	- - - -	2 50.67	+48 56 9.85	Comet 1852, II, 52.
173	A. Z, 153, 111	9	- - -	- - - -	3 37.66	49 7 18.95	Comet 1852, II, 52.
174	B. A. C., 672	6.5	- - -	- - - -	3 57.84	7 54 47.79	Parthenope, 51.
175	Weisse II, 35	9	- - -	- - - -	4 16.11	4 6 40.91	Parthenope, 51.
176	Weisse II, 38	9	- - -	- - - -	- - -	8 54 58.39	Circe. 57.
177	A. Z, 154, 131	7.5	- - -	- - - -	5 14.61	- - - -	Comet 1852, II, 52.
178	B. A. C., 683	7	- - -	- - - -	5 25.38	- - - -	Fides, 56.
179	Weisse II, 64	9	- - -	- - - -	5 26.71	13 35 2.14	Victoria, 51.
180	Weisse II, 81	9	- - -	- - - -	- - -	+ 7 22 50.23	Parthenope, 51.

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II hours—Continued.

Number.	STAR.	Magnitude.	1850. α	1850. δ	1860. α	1860. δ	ASTEROIDS AND COMETS—COMPARED.
			m. s.	° ′ ″	m. s.	° ′ ″	
181	B. A. C, 687	7	- - -	- - - -	6 10.54	+ 4 21 26.23	Parthenope, 51. Astræa, 53.
182	Weisse II, 102	9	- - -	+ 4 10 3.86	7 40.51	- - - -	Astræa, 53.
183	Rumker, 568	9	- - -	- - - -	7 42.32	17 15 50.28	Egeria, 51.
184	Weisse II, 112	9	- - -	- - - -	8 28.18	4 59 51.34	Parthenope, 51.
185	Lalande, 4238	7.5	- - -	17 45 24.70	- - -	- - - -	Egeria, 51.
186	Weisse II, 143	8	- - -	13 46 15.12	10 27.47	13 49 5.19	Victoria, 51.
187	Weisse II, 144	8	- - -	- - - -	10 31.64	12 46 51.52	Massilia, 53.
188	Weisse II, 158	7	- - -	+ 7 29 7.80	11 16.84	+ 7 31 56.86	Parthenope, 51.
189	Weisse II, 168	8	- - -	- - - -	- - -	— 5 31 3.55	Melpomene, 56.
190	Weisse II, 182	8	- - -	- - - -	12 36.90	+13 39 11.04	Victoria, 51.
191	Weisse II, 185	9	- - -	- - - -	- - -	— 5 38 41.29	Melpomene, 56.
192	Weisse II, 209	9	- - -	- - - -	13 52.96	+13 17 34.47	Massilia, 53.
193	Weisse II, 235	8	- - -	+ 7 51 33.85	15 30.72	- - - -	Parthenope, 51.
194	Weisse II, 250	7.5	- - -	- - - -	- - -	— 6 49 46.20	Melpomene, 56.
195	B. A. C., 741	6.5	- - -	9 1 58.77	17 1.79	+ 9 4 43.87	Parthenope, 51.
196	B. A. C, 744	4	- - -	- - - -	17 34.93	66 46 11.70	Comet 1852, II, 52.
197	B. Z., 332, 45	8.5	- - -	18 52 26.18	17 51.07	- - - -	Egeria, 51.
198	(* 42) W.	10	- - -	- - - -	- - -	61 10 9.18	Comet 1852, II, 52.
199	B. Z., 27, 25	8	- - -	- - - -	19 3.03	22 14 48.51	Euphrosyne, 55.
200	Weisse II, 305	8	- - -	+ 9 53 14.67	19 15.31	+ 9 56 0.36	Parthenope, 51 and 52.
201	B. Z, 27, 26	9	- - -	- - - -	19 16.36	+22 16 21.49	Euphrosyne, 55.
202	Weisse II, 312	8	- - -	- - - -	19 41.88	5 55 46.99	Astræa, 53.
203	Weisse II, 333	9	- - -	- - - -	20 48.64	5 25 40.46	Astræa, 53.
204	B. A. C., 771	6	- - -	+17 2 15.44	23 8.73	+17 4 57.79	Comet 1854, II, 54.
205	Weisse II, 386	9	- - -	- - - -	- - -	— 6 57 10.58	Melpomene, 56.
206	B. A. C., 776	6	- - -	- - - -	24 15.73	- - - -	Astræa, 53.
207	B. Z., 391, 35	8.5	- - -	19 46 29.65	- - -	- - - -	Egeria, 51.
208	Weisse II, 437	8	- - -	- - - -	26 55.08	- - - -	Melpomene, 56.
209	Σ. Cat. G., 250	8	- - -	- - - -	27 8.86	— 6 15 11.50	Melpomene, 56.
210	B. A. C., 789	6.5	- - -	+ 6 48 56.01	27 39.30	+ 6 51 56.89	Astræa, 53.
211	Weisse II, 470	8.5	- - -	- - - -	28 31.09	+14 32 13.07	Massilia, 56.
212	B. Z., 391, 37	9	- - -	- - - -	28 49.97	20 5 20.22	Egeria, 51.
213	Weisse II, 479	9	- - -	- - - -	29 3.48	14 34 6.21	Victoria, 51.
214	B. A. C., 800	6.5	- - -	- - - -	29 10.25	7 7 6.95	Astræa, 53.
215	Weisse II, 556	9	- - -	- - - -	32 56.89	+15 4 59.39	Victoria, 51.
216	Weisse II, 566	9	- - -	- - - -	- - -	— 6 17 0.31	Melpomene, 56.
217	Weisse II, 569	9	- - -	+15 23 38.34	33 35.62	- - - -	Victoria, 51.
218	Weisse II, 576	8	- - -	- - - -	33 35.22	— 5 37 39.85	Melpomene, 56.
219	B. Z., 391, 41	8	- - -	- - - -	35 44.91	+20 33 1.97	Egeria, 51.
220	B. Z., 391, 44	8	- - -	- - - -	36 50.63	+21 1 12.77	Egeria, 51.
221	Weisse II, 649	8.5	- - -	- - - -	37 21.67	— 5 6 57.65	Melpomene, 56.
222	B. A. C., 866	6.5	- - -	- - - -	40 37.86	+24 36 5.55	Euphrosyne, 55.
223	B. Z., 530, 60	8	- - -	- - - -	42 5.00	- - - -	Euphrosyne, 55.
224	Weisse II, 762	9	- - -	- - - -	- - -	— 1 44 35.53	Melpomene, 56.
225	Lalande, 5358	8	- - -	- - - -	46 29.15	- - - -	Melpomene, 56.
226	Rumker, 742	9	- - -	+22 19 16.39	47 26.90	+22 21 47.76	Egeria, 51.
227	Weisse II, 820	7	- - -	- - - -	47 37.56	— 0 37 18.00	Melpomene, 56.
228	Weisse II, 831	7	- - -	- - - -	- - -	— 0 7 55.85	Melpomene, 56.
229	(* 68) W.	9.5	- - -	14 45 19.56	- - -	- - - -	Euterpe, 53.
230	B. A. C., 905	6.5	- - -	+ 7 46 30.35	- - -	- - - -	Astræa, 49.
231	Rumker, 755	9	- - -	- - - -	50 28.69	- - - -	Euterpe, 53.
232	Weisse II, 880	8.5	- - -	+ 9 35 58.41	- - -	- - - -	Astræa, 50.
233	Weisse II, 881	9	- - -	- - - -	50 54.46	+14 35 29.61	Euterpe, 53.
234	Weisse II, 893	8.5	- - -	9 36 27.78	- - -	- - - -	Astræa, 50.
235	B. A. C., 929	4	- - -	8 18 22.67	- - -	- - - -	Astræa, 49.
236	B. Z, 337, 20	8	- - -	- - - -	54 0.26	15 57 51.18	Euterpe, 54. Proserpine, 59.
237	Weisse II, 967	8	- - -	7 52 46.52	- - -	- - - -	Astræa, 49.
238	B. Z, 27, 70	7	- - -	- - - -	55 21.88	22 30 33.10	Egeria, 51.
239	B. A. C., 953	4	- - -	- - - -	56 12.76	- - - -	Euphrosyne, 60.
240	Weisse II, 1037	9	- - -	+14 11 24.93	58 53.97	+14 13 49.46	Comet 1854, II, 54.

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III hours.

Number.	STAR.	Magnitude.	1850. α	1850. δ	1860. α	1860. δ	ASTEROIDS AND COMETS—COMPARED.
			m. s.	° ′ ″	m. s.	° ′ ″	
241	B. A. C., 975	7	- - -	+ 7 53 21.64	- - -	- - - -	Astræa, 49.
242	Rumker, 879	7	- - -	- - - -	2 55.23	- - - -	Euterpe, 54.
243	B. Z, 337, 31	9	- - -	- - - -	3 12.35	+16 46 10.83	Euterpe, 54.
244	Weisse III, 26	8	- - -	- - - -	- - -	9 28 17.08	Irene, 57.
245	Weisse III, 35	9	- - -	8 9 6.47	- - -	- - - -	Astræa, 49.
246	Weisse III, 62	9	- - -	8 1 33.49	4 4.92	8 3 52.70	Comet 1851, I, 51. Astræa, 49.
247	B. Z, 448, 4	8	- - -	- - - -	4 6.70	38 26 36.24	Euphrosyne, 60.
248	B. Z., 337, 32	8.5	- - -	- - - -	- - -	16 46 14.53	Euterpe, 54.
249	Weisse III, 98	9	- - -	- - - -	- - -	+ 9 55 49.18	Parthenope, 55.
250	Weisse III, 114	9	- - -	+11 52 15.43	- - -	- - - -	Astræa, 50.
251	B. Z, 530, 91	9	- - -	- - - -	7 54.98	+23 50 40.45	Egeria, 51.
252	B. Z, 337, 40	8	- - -	- - - -	9 18.36	17 3 18.71	Euterpe, 54.
253	Weisse III, 168	8	- - -	- - - -	10 8.28	13 19 50.35	Comet 1854, II, 54.
254	B. Z, 506, 55	8	- - -	- - - -	10 25.11	- - - -	Euterpe, 54.
255	Weisse III, 172	8	- - -	+12 16 17.76	- - -	- - - -	Astræa, 50.
256	Weisse III, 205	8	- - -	12 49 44.60	- - -	- - - -	Astræa, 50.
257	Anon.	9	13 29.17	8 49 6.72	14 0.72	- - - -	Astræa, 49.
258	Weisse III, 233	8.5	- - -	- - - -	13 42.22	10 7 24.55	Parthenope, 55.
259	Rumker, 845	9	- - -	- - - -	13 55 32	24 14 45.91	Egeria, 51.
260	Rumker, 849	6	- - -	+24 11 19.92	16 2.69	+24 13 32.94	Egeria, 51.
261	B. Z., 530, 104	9	- - -	- - - -	16 53.77	+24 54 21.51	Egeria, 51.
262	B. A. C., 1057	5	- - -	+ 8 29 49.97	- - -	- - - -	Astræa, 49.
263	Weisse III, 295	9	- - -	- - - -	17 23.53	9 30 45.27	Irene, 57.
264	B. Z, 508, 94	8	- - -	- - - -	18 23.23	37 33 10.35	Euphrosyne, 60.
265	Weisse III, 306	9	- - -	13 5 20.08	- - -	- - - -	Astræa, 50
266	B. Z., 506, 64	8	- - -	- - - -	- - -	+18 15 49.94	Euterpe, 54.
267	B. A. C., 1068	4	- - -	9 12 20.79	- - -	- - - -	Astræa, 49.
268	Weisse III, 334	8	- - -	- - - -	19 36.20	- - - -	Comet 1854, II, 54.
269	Rumker, 870	9	- - -	- - - -	21 47.99	+18 16 16.49	Euterpe, 54.
270	Anon.	9	- - -	+ 9 26 9.52	- - -	- - - -	Astræa, 49.
271	B. Z, 506, 70	8.5	- - -	- - - -	22 44.22	+18 19 12.95	Euterpe, 54.
272	Groomb., 698	7.8	- - -	- - - -	22 44.51	- - - -	Comet 1857, I, 57.
273	B. Z., 508, 101	9	- - -	- - - -	22 53.13	36 59 42.53	Euphrosyne, 60.
274	Weisse III, 428	8	- - -	- - - -	24 34.89	7 5 18.10	Comet 1851, I, 51.
275	Weisse III, 447	8	- - -	+13 16 22.06	- - -	- - - -	Astræa, 50.
276	Weisse III, 474	9	- - -	13 40 4.82	- - -	- - - -	Astræa, 50.
277	Anon.	9	- - -	13 57 17.85	- - -	- - - -	Astræa, 50.
278	B. Z., 506, 79	8.5	- - -	- - - -	30 8.17	18 53 53.09	Euterpe, 54.
279	B. Z., 396, 35	8.5	- - -	- - - -	34 3.12	+26 7 20.55	Egeria, 51.
280	Rumker, 940	9	- - -	+14 18 25.54	- - -	- - - -	Astræa, 50.
281	Weisse III, 752	9	- - -	- - - -	- - -	+12 4 19.46	Parthenope, 55.
282	B. Z., 396, 45	9	- - -	- - - -	39 51.99	26 9 13.61	Egeria, 51.
283	B. Z, 337, 68	8	- - -	+16 29 44.03	40 2.72	- - - -	Irene, 54.
284	Weisse III, 774	9	- - -	15 7 15.24	- - -	- - - -	Astræa, 50.
285	B. A. C., 781	8.5	- - -	11 14 38.91	- - -	- - - -	Astræa, 49.
286	B. Z, 402, 10	9	- - -	- - - -	41 51.96	34 40 14.70	Euphrosyne, 60.
287	Lalande, 7069	8.5	- - -	- - - -	42 10.73	- - - -	Comet 1854, II, 54.
288	B. Z., 402, 13	8	- - -	- - - -	42 26.86	34 10 46.48	Euphrosyne, 60.
289	B. Z., 396, 48	9	- - -	- - - -	- - -	26 38 56.48	Egeria, 51.
290	Rumker, 1023	9	- - -	+16 10 31.63	46 29.06	+16 12 21.94	Irene, 53.
291	B. Z., 391, 127	9	- - -	- - - -	46 35.79	+19 41 10.98	Euterpe, 54.
292	B. Z., 391, 128	9	- - -	- - - -	- - -	19 41 2.25	Euterpe, 54.
293	B. Z, 337, 86	9	- - -	- - - -	56 39.39	16 14 24.73	Irene, 53.
294	B. Z, 391, 144	9	- - -	+20 26 33.64	56 44.94	20 28 15.79	Lutetia, 53.
295	B. Z., 397, 35	9	- - -	- - - -	56 54.80	27 29 44.34	Egeria, 51.
296	Rumker, 1079	7.5	- - -	- - - -	57 46.44	15 21 16.48	Psyche, 55.
297	Rumker, 1084	7.5	- - -	- - - -	58 19.52	15 18 58.40	Psyche, 55.
298	B. Z, 342, 3	8.5	- - -	- - - -	58 55.00	20 52 57.27	Euterpe, 54.
299	B. Z, 342, 4	9	- - -	- - - -	59 30.05	+20 53 7.75	Euterpe, 54.

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IV hours.

Number.	STAR.	Magnitude.	1850. α	1850. δ	1860. α	1860. δ	ASTEROIDS AND COMETS—COMPARED.
			m. s.	° ′ ″	m. s.	° ′ ″	
300	Weisse IV, 21	9	- - -	- - - -	2 34.71	+ 7 19 41.46	Comet 1854, II, 54.
301	Rumker, 1104	9	- - -	- - - -	3 41.91	28 4 10.26	Egeria, 51.
302	B. A. C., 1296	6	- - -	- - - -	6 00.95	7 21 20.15	Comet 1854, II, 54.
303	(* 76) W.	8	- - -	- - - -	- - -	44 19 37.93	Comet 1857, II, 57.
304	B. Z., 393, 68	9	- - -	- - - -	7 20.28	- - - -	Lutetia, 53.
305	B. Z., 330, 7	9	- - -	- - - -	- - -	15 51 51.29	Psyche, 55.
306	B. A. C., 1316	7	- - -	- - - -	10 6.26	21 14 1.70	Euterpe, 54
307	(* 90) W.	8	- - -	- - - -	11 1.33	- - - -	Comet 1858, VI, 58.
308	B. A. C., 1350	6	- - -	- - - -	15 23.19	16 26 50.75	Psyche, 55.
309	B. Z., 393, 80	8	- - -	- - - -	15 56.04	21 24 32.87	Lutetia, 53. Euterpe, 54.
310	B. Z., 397, 54	9	- - -	- - - -	16 52.27	+29 12 6.55	Egeria, 51.
311	B. A. C., 1366	7	- - -	- - - -	17 37.95	+15 37 3.89	Irene, 53.
312	B. Z., 521, 25	9	- - -	- - - -	- - -	23 47 4.93	Proserpine, 55.
313	B. Z., 397, 58	7.5	- - -	+27 47 44.75	21 37.04	- - - -	Calliope, 53.
314	Anon.	10	- - -	- - - -	- - -	28 59 34.48	Egeria, 51.
315	B. A. C., 1402	6	- - -	- - - -	23 52.22	- - - -	Irene, 53.
316	Rumker, 1235	9	- - -	- - - -	24 49.84	15 42 19.55	Irene, 53.
217	(* 60) W.	10	- - -	- - - -	24 58.26	- - - -	Calliope, 53.
318	B. A. C., 1408	7	- - -	- - - -	25 52.54	- - - -	Lutetia, 53. Calliope, 53.
319	B. Z., 393, 93	9	- - -	- - - -	26 17.56	21 56 33.55	Euterpe, 54.
320	B. Z., 393, 94	9	- - -	- - - -	26 20.29	+22 5 4.92	Euterpe, 54.
321	B. Z., 393, 95	8.5	- - -	- - - -	27 16.73	- - - -	Lutetia, 53.
322	B. Z., 397, 65	9	- - -	- - - -	29 38.16	- - - -	Calliope, 53.
323	B. Z., 393, 100	9	- - -	- - - -	30 51.01	+22 22 13.48	Euterpe, 54.
324	B. A. C., 1437	5.5	- - -	- - - -	31 16.08	15 38 15.56	Irene, 53.
325	B. Z., 393, 104	9	- - -	- - - -	33 19.14	22 21 12.16	Euterpe, 54.
326	Weisse IV, 728	9	- - -	- - - -	33 44.80	- - - -	Comet 1854, II, 54.
327	Weisse IV, 732	9	- - -	- - - -	34 00.86	- - - -	Comet 1854, II, 54.
328	Weisse IV, 754	8	- - -	- - - -	34 54.58	2 43 11.86	Comet 1853, I, 53.
329	Weisse IV, 806	9	- - -	+ 2 55 31.49	- - -	+ 2 56 42.57	Comet 1853, I, 53.
330	Weisse IV, 809	9	- - -	- - - -	37 33.46	— 1 41 46.31	Comet 1853, I, 53.
331	A. Z., 163, 31	8	- - -	- - - -	44 15.55	- - - -	Comet 1857, II, 57.
332	B. Z., 396, 104	8	- - -	- - - -	44 18.42	+26 32 27.94	Calliope, 52.
333	Weisse IV, 972	8	- - -	- - - -	44 57.85	1 16 19.53	Comet 1854, II, 54.
334	B. Z., 393, 120	9	- - -	- - - -	45 27.07	22 32 10.47	Euterpe, 54.
335	B. Z., 398, 98	8	- - -	+29 53 11.66	- - -	- - - -	Calliope, 53.
336	B. Z., 393, 128	9	- - -	- - - -	52 8.69	- - - -	Euterpe, 54.
337	B. Z., 393, 137	8	- - -	- - - -	- - -	+22 51 51.31	Euterpe, 54.

V hours.

338	Rumker, 2353	8.5	- - -	- - - -	2 9.02	- - - -	Comet 1857, I, 57.
339	B. Z., 513, 5	9	- - -	- - - -	- - -	+30 15 46.48	Calliope, 53.
340	B. Z., 396, 127	8	3 4.64	+26 16 19.81	- - -	- - - -	Mars, 50.
341	B. Z., 513, 7	9	- - -	- - - -	- - -	30 13 50.58	Calliope, 53.
342	B. Z., 405, 6	9	10 29.37	26 5 49.14	- - -	- - - -	Mars, 50.
343	B. Z., 513, 24	8.5	- - -	- - - -	16 35.63	- - - -	Calliope, 53.
344	B. Z., 523, 15	8.5	17 47.92	26 26 53.86	- - -	- - - -	Mars, 50.
345	B. Z., 405, 15	9	- - -	26 27 47.06	- - -	- - - -	Mars, 49.
346	B. Z., 513, 31	9	- - -	- - - -	22 52.83	- - - -	Calliope, 53.
347	B. A. C., 1742	6	- - -	- - - -	26 54.06	23 56 33.25	Euterpe, 54.
348	B. Z., 405, 28	7	- - -	26 31 31.45	- - -	- - - -	Mars, 49.
349	B. Z., 405, 56	9	- - -	26 26 48.67	- - -	- - - -	Mars, 49.
350	B. Z., 524, 72	8.5	- - -	- - - -	48 59.97	+21 57 41.55	Iris, 55.
351	Rumker, 1673	9	- - -	26 16 31.14	- - -	- - - -	Mars, 49.
352	Rumker, 1680	8	- - -	+26 21 1.58	- - -	- - - -	Mars, 49.

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VI hours.

Number.	STAR.	Magnitude.	1850. α	1850. δ	1860. α	1860. δ	ASTEROIDS AND COMETS—COMPARED.
			m. s.	° ′ ″	m. s.	° ′ ″	
353	B. Z., 525, 97	8	- - -	- - - -	2 38.80	- - - -	Calliope, 53.
354	Lalande, 11684	8	1 33.98	+26 2 16.58	- - -	- - - -	Mars, 49.
355	Lalande, 11714	9	2 26.09	26 0 42.36	- - -	- - - -	Mars, 49.
356	B. Z., 522, 159	8	- - -	- - - -	7 26.95	- - - -	Comet 1859, II, 59.
357	Lalande, 12237	9	16 50.58	25 35 23.01	- - -	- - - -	Mars, 49.
358	B. Z, 523, 106	9	18 2.98	25 27 32.69	- - -	- - - -	Mars, 49.
359	B. Z., 348, 84	9	18 48.31	24 20 31.09	- - -	- - - -	Mars, 49.
360	B. Z, 348, 88	8.5	- - -	- - - -	22 7.98	+23 37 42.88	Euterpe, 54.
361	Lalande, 12557	9	25 50.59	24 44 45.64	- - -	- - - -	Mars, 49.
362	B. Z., 348, 95	9	27 56.20	+24 31 3.86	- - -	- - - -	Mars, 49.
363	B. Z., 348, 101	8	- - -	- - - -	31 33.67	23 47 46.54	Euterpe, 54.
364	B. Z, 348, 102	8.5	- - -	- - - -	- - -	23 46 8.06	Euterpe, 54.
365	A. Z., 93, 90	8.5	- - -	- - - -	50 46.25	60 49 20.11	Comet 1854, III, 54.
366	B. A. C., 2312	6	- - -	- - - -	57 4.25	61 0 24.25	Comet 1854, III, 54.
367	Rumker, 2086	7.5	- - -	- - - -	57 11.25	+60 57 31.53	Comet 1854, III, 54.

VII hours.

Number.	STAR.	Magnitude.	1850. α	1850. δ	1860. α	1860. δ	ASTEROIDS AND COMETS—COMPARED.
368	B. Z., 492, 6	8	- - -	- - - -	6 4.36	+ 42 10 25.64	Comet 1860, III.
369	A. Z., 93, 119	9	- - -	- - - -	9 35.86	60 14 28.59	Comet 1854, III, 54.
370	A. Z, 93, 120	6.5	- - -	- - - -	9 59.61	- - - -	Comet 1854, III, 54.
371	Weisse VII, 320	9	- - -	- - - -	11 9.85	12 5 34.88	Victoria, 52.
372	Weisse VII, 368	8	- - -	- - - -	12 57.20	- - - -	Victoria, 52.
373	Weisse VII, 551	7	- - -	- - - -	19 39.24	10 24 44.55	Victoria, 52.
374	B. Z., 276, 245	8	- - -	- - - -	23 38.26	- - - -	Comet 1857, IV, 57.
375	Weisse VII, 756	9	- - -	- - - -	24 57.17	10 43 1.99	Victoria, 52.
376	Weisse VII, 816	9	- - -	- - - -	27 4.58	13 18 48.19	Victoria, 52.
377	(☿ 25) W.	9.5	- - -	- - - -	33 23.79	- - - -	Victoria, 52.
378	Weisse VII, 1053	9	- - -	- - - -	34 37.67	13 34 11.98	Victoria, 52.
379	B. A. C., 2563	5.5	- - -	- - - -	38 28.36	- - - -	Encke's Comet, 58.
380	Rumker, 2282	9	- - -	- - - -	39 28.71	+ 13 9 33.55	Victoria, 52.
381	B. Z, 452, 77	7	45 47.77	+39 40 31.06	- - -	- - - -	Comet II, 1850, 50.
382	A. Z., 96, 120	8	- - -	- - - -	53 42.28	- - - -	Comet 1854, III, 54.

VIII hours.

Number.	STAR.	Magnitude.	1850. α	1850. δ	1860. α	1860. δ	ASTEROIDS AND COMETS—COMPARED.
383	B. Z., 281, 144	9	- - -	- - - -	- - -	+16 49 1.99	Leda, 56.
384	B. A. C., 2788	6.5	- - -	- - - -	12 10.72	21 11 11.51	Hebe, 53.
385	B. Z., 273, 108	7	- - -	- - - -	14 5.89	15 12 36.94	Melpomene, 54.
386	B. Z., 278, 31	9	- - -	- - - -	14 47.90	21 0 49.87	Hebe, 53.
387	A. Z, 188, 25	9	- - -	- - - -	- - -	56 58 34.86	Comet 1854, III, 54.
388	B. A. C., 2806	8	- - -	- - - -	16 15.61	11 4 50.20	Victoria, 51.
389	B. Z., 277, 179	9	- - -	- - - -	- - -	19 37 12.37	Urania, 56
390	A. Z., 188, 28	8	- - -	- - - -	17 13.86	- - - -	Comet 1854, III, 54.
391	B. Z., 452, 124	7	- - -	- - - -	- - -	40 20 46.17	Euphrosyne, 55.
392	B. Z., 452, 125	8	- - -	- - - -	- - -	40 17 52.79	Euphrosyne, 55.
393	B. Z., 452, 126	8	- - -	- - - -	- - -	40 23 43.68	Euphrosyne, 55.
394	B. Z., 277, 185	8	- - -	- - - -	- - -	19 42 38.77	Urania, 56.
395	Rumker, 2533	9	- - -	- - - -	21 20.97	- - - -	Hebe, 53.
396	A. Z, 83, 66	8.5	- - -	- - - -	22 17.20	55 49 32.95	Comet 1854, III, 54.
397	Weisse VIII, 618	8	- - -	+13 18 20.81	24 26.25	13 16 22.38	Melpomene, 54.
398	Weisse VIII, 736	9	- - -	+12 22 15.99	28 46.13	12 20 15.58	Melpomene, 54.
399	Weisse VIII, 828	8	- - -	- - - -	32 11.23	12 2 1.04	Melpomene, 54.
400	B. Z., 450, 12	8.5	- - -	- - - -	- - -	40 6 28.71	Euphrosyne, 55.
401	B Z, 450, 14	9	- - -	- - - -	- - -	40 6 19.42	Euphrosyne, 55.
402	Weisse VIII, 999	9	- - -	- - - -	39 6.10	11 27 38.46	Melpomene, 54.
403	Rumker, 2699	7	- - -	- - - -	48 51.77	+18 0 58.97	Urania, 56.
404	Lalande, 17662	8	- - -	- - - -	49 35.16	—13 22 15.30	———, 53.
405	Weisse VIII, 1367	9	- - -	- - - -	53 14.66	+ 9 5 38.03	Melpomene, 54.

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IX hours.

Number.	STAR.	Magnitude.	1850. α	1850. δ	1860. α	1860. δ	ASTEROIDS AND COMETS—COMPARED.
			m. s.	° ′ ″	m. s.	° ′ ″	
406	B. A. C., 3113	6.5	- - -	- - - -	- - -	+27 12 21.22	Pandora, 60.
407	B. Z., 347, 40	8	- - -	- - - -	8 37.23	25 13 9.38	Metis, 51.
408	B. Z., 345, 34	9	- - -	- - - -	9 14.55	24 14 15.20	Metis, 51
409	A. Z., 190, 23	9	- - -	- - - -	15 12.20	50 46 17.28	Comet 1854, III, 54.
410	A. Z., 190, 24	7	- - -	- - - -	15 9.73	50 52 33.59	Comet 1854, III, 54.
411	B. A. C., 3194	6	- - -	- - - -	15 25.33	25 46 45.33	Metis, 51.
412	B. Z, 345, 39	9	- - -	- - - -	18 7.42	23 14 48.95	Metis, 51.
413	B. Z, 345, 40	9	- - -	- - - -	18 19.28	23 14 47.82	Metis, 51.
414	B. Z., 278, 159	9	- - -	- - - -	23 3.85	21 54 13.73	Metis, 51.
415	B. Z, 345, 44	9	- - -	- - - -	23 26.66	25 1 42.17	Metis, 51.
416	Weisse IX, 563	9	- - -	- - - -	26 6.01	12 42 23.59	Fortuna, 54.
417	Weisse IX, 579	9	- - -	- - - -	26 48.48	12 9 3.91	Fortuna, 54.
418	B. Z., 278, 169	9	- - -	- - - -	30 45.37	21 46 54.52	Metis, 51.
419	B. Z., 278, 172	9	- - -	- - - -	31 17.68	21 5 29.96	Metis, 51.
420	B. Z., 278, 170	9	- - -	- - - -	31 19.54	21 49 40.35	Metis, 51.
421	B. Z., 450, 82	7.5	- - -	- - - -	32 41.36	39 35 17.86	Euphrosyne, 55.
422	B. A. C., 3318	7	- - -	- - - -	35 31.78	20 49 52.61	Metis, 51.
423	B. Z., 280, 49	9	- - -	- - - -	- - -	17 8 38.60	Lutetia, 54.
424	B. Z., 349, 70	8	- - -	- - - -	37 49.06	- - - -	Comet 1858, V, 58.
425	B. Z, 497, 20	8	- - -	- - - -	39 45.19	44 11 0.41	Comet 1854, III, 54.
426	Weisse IX, 871	8	- - -	- - - -	- - -	11 1 53.35	Fortuna, 54.
427	Weisse IX, 887	9	- - -	- - - -	41 20.21	11 12 24.65	Fortuna, 54.
428	B. Z, 274, 137	7.5	- - -	- - - -	41 21.12	18 42 24.76	Lutetia, 54.
429	B. Z, 274, 148	9	- - -	- - - -	45 40.29	- - - -	Lutetia, 54.
430	Rumker, 2981	9	- - -	- - - -	45 43.80	- - - -	Lutetia, 54.
431	B. Z, 349, 77	8	- - -	- - - -	45 55.84	- - - -	Comet 1858, V, 58.
432	Weisse IX, 998	8	- - -	- - - -	46 29.66	- - - -	Fortuna, 54.
433	Rumker, 3002	8	- - -	- - - -	47 2.68	19 29 2.46	Metis, 51.
434	Weisse IX, 1034	8	- - -	- - - -	47 55.23	10 46 21.77	Fortuna, 54.
435	B. Z., 274, 153	9	- - -	- - - -	49 19.31	17 43 16.09	Lutetia, 54.
436	B. Z., 454, 24	7.5	- - -	- - - -	51 24.36	42 59 10.10	Comet 1854, III, 54.
437	B. Z, 275, 87	9	- - -	- - - -	51 41.20	18 46 32.25	Metis, 51.
438	Weisse IX, 1204	8	- - -	- - - -	56 15.77	12 47 51.85	Psyche, 57.
439	Rumker, 3061	9	- - -	- - - -	57 22.62	13 31 29.71	Pysche, 52.
440	B. Z, 274, 167	9	- - -	- - - -	57 27.54	18 14 48.19	Metis, 52.
441	B. Z, 280, 49	9	- - -	- - - -	- - -	17 8 38.60	Lutetia, 54.
442	(✿ 29) W.	9.5	- - -	- - - -	57 57.68	- - - -	Pysche, 52.
443	(✿ 4) W.	9	- - -	- - - -	58 16.25	- - - -	Metis, 51.
444	Weisse IX, 1259	8	- - -	- - - -	59 5.62	13 27 46.70	Psyche, 52.
445	B. Z., 498, 7	9	- - -	- - - -	- - -	+39 26 49.38	Comet 1854, III, 54.

X hours.

446	B. Z., 280, 51	8	- - -	- - - -	- - -	+16 57 33.52	Lutetia, 54.
447	α Leonis	1	- - -	- - - -	0 54.76	12 39 0.70	Psyche, 52.
448	Rumker, 3069	7.5	- - -	- - - -	- - -	12 40 46.00	Psyche, 52.
449	B. Z, 275, 106	6	- - -	- - - -	2 15.69	21 1 1.95	Metis, 51.
450	B. A. C., 3466	6	- - -	- - - -	2 31.76	- - - -	Euphrosyne, 56.
451	B. A. C., 3468	6.5	- - -	+38 8 17.76	2 54.17	38 5 23.17	Comet 1854, III, 54. Euphrosyne, 56.
452	Rumker, 3076	8.5	- - -	- - - -	- - -	12 30 44.47	Psyche, 57.
453	B. Z, 410, 5	9	- - -	- - - -	4 5.76	17 13 30.84	Metis, 51.
454	Weisse X, 45	8	- - -	- - - -	4 5.75	12 43 29.96	Psyche, 52.
455	Weisse X, 76	9	- - -	- - - -	5 57.81	12 1 48.61	Psyche, 57.
456	B. Z., 454, 41	8	- - -	- - - -	- - -	41 58 19.22	Euphrosyne, 56.
457	Rumker, 3113	9	- - -	- - - -	8 42.10	12 21 50.70	Psyche, 52.
458	B. Z., 497, 51	8.5	- - -	- - - -	8 45.95	- - - -	Euphrosyne, 56.
459	Weisse X, 173	9	- - -	- - - -	10 56.18	11 32 9.97	Psyche, 57.
460	Σ. Cat. G., 1198	7.5	- - -	- - - -	- - -	44 36 34.34	Euphrosyne, 56.
461	Weisse X, 224	7	13 12.13	— 4 37 45.86	- - -	- - - -	Comet 1850, II, 50.
462	Weisse X, 229	7	13 34.90	— 4 39 46.94	- - -	- - - -	Comet 1850, II, 50.
463	Weisse X, 234	9	- - -	- - - -	14 27.69	+11 24 17.30	Psyche, 57.

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X hours—Continued.

Number.	STAR.	Magnitude.	1850. α	1850. δ	1860. α	1860. δ	ASTEROIDS AND COMETS—COMPARED.
			m. s.	° ′ ″	m. s.	° ′ ″	
464	Weisse X, 276	8.5	- - -	- - - -	16 54.41	+11 17 42.92	Psyche, 57.
465	Rumker, 3172	9	- - -	- - - -	17 32.30	11 34 46.03	Psyche, 52.
466	Weisse X, 288	8	- - -	- - - -	- - -	10 41 28.24	Psyche, 57.
467	B. A. C., 3559	5.5	- - -	- - - -	17 39.76	36 8 12.64	Comet 1854, III, 54.
468	B. A. C., 3560	4.5	- - -	- - - -	17 52.69	34 30 27.38	Comet 1854, III, 54.
469	B. Z., 456, 17	9	- - -	- - - -	18 49.43	- - - -	Flora, 55.
470	Weisse X, 316	7.5	- - -	- - - -	19 1.06	+11 12 55.64	Psyche, 52.
471	A. Z., 98, 25	6.5	- - -	- - - -	- - -	+45 55 33.03	Euphrosyne, 56.
472	B. A. C., 3775	7	- - -	- - - -	- - -	10 28 29.28	Psyche, 57.
473	B. Z., 456, 21	7	- - -	- - - -	21 9.78	- - - -	Flora, 55.
474	Weisse X, 377	9	- - -	- - - -	21 55.75	11 14 27.42	Psyche, 52.
475	Rumker, 3209	9	- - -	- - - -	- - -	17 41 43.06	———, 55.
476	Rumker, 548	9	29 57.84	—10 16 0.19	- - -	- - - -	Comet 1850, II, 50.
477	Rumker, 548	9	30 18.04	—10 16 18.65	- - -	- - - -	Comet 1850, II, 50.
478	B. A. C., 3640	4	- - -	- - - -	30 49.81	- - - -	Comet 1858, V, 58.
479	A. Z., 178, 38	7	- - -	- - - -	- - -	47 34 11.72	Euphrosyne, 56.
480	B. Z., 499, 114	8.5	- - -	- - - -	32 6.29	+36 13 15.80	Egeria, 56.
481	B. Z., 526, 41	7	- - -	- - - -	32 35.47	+28 15 13.31	Comet 1854, III, 54.
482	Weisse X, 27	9	33 31.16	—11 25 0.44	- - -	- - - -	Comet 1850, II, 50.
483	B. Z., 407, 118	8.5	- - -	- - - -	34 26.19	37 15 0.67	Comet 1853, III, 53.
484	B. Z., 499, 117	9	- - -	- - - -	34 35.16	36 6 33.16	Egeria, 56.
485	Weisse X, 618	9	- - -	- - - -	- - -	11 5 14.26	Fides, 57.
486	Weisse X, 673	9	- - -	- - - -	- - -	10 45 28.74	Fides, 57.
487	B. Z., 498, 52	9	- - -	- - - -	- - -	39 40 31.56	Euphrosyne, 55.
488	B. Z., 499, 121	8.5	- - -	- - - -	- - -	36 22 23.15	Egeria, 56.
489	Weisse X, 716	9	- - -	- - - -	40 48.52	12 37 47.33	Lutetia, 56.
490	B. Z., 499, 123	9	- - -	- - - -	41 22.48	+36 38 49.24	Comet 1853, III, 53.
491	Weisse X, 743	6	- - -	- - - -	41 53.67	- - - -	Lutetia, 56.
492	Weisse X, 757	9	- - -	- - - -	- - -	+10 33 50.67	Fides, 57.
493	Weisse X, 781	7.5	- - -	- - - -	43 46.58	- - - -	Lutetia, 56.
494	Weisse X, 822	8.5	- - -	- - - -	45 28.98	12 1 51.00	Lutetia, 56.
495	Weisse X, 837	9	- - -	- - - -	46 19.44	13 3 18.36	Lutetia, 56.
496	Weisse X, 859	8	46 54.69	— 0 43 15.33	- - -	- - - -	Comet III, 59.
497	B. A. C., 3736	7	- - -	- - - -	47 10.51	- - - -	Comet 1858, V, 58.
498	B. Z., 499, 130	9	- - -	- - - -	45 57.76	+35 49 1.75	Egeria, 56.
499	Weisse X, 879	9	48 2.96	14 28 19.13	- - -	- - - -	Comet 1850, II, 50.
500	Lalande, 21026	8	48 26.00	— 0 49 8.86	- - -	- - - -	Comet 1849, III, 49.
501	Weisse X, 914	8	- - -	- - - -	50 52.78	- - - -	Lutetia, 56.
502	B. Z., 499, 133	9	- - -	- - - -	- - -	+35 52 59.22	Egeria, 56.
503	A. Z., 178, 61	7	- - -	- - - -	52 57.43	- - - -	Euphrosyne, 56.
504	Weisse X. 987	8	- - -	- - - -	- - -	9 55 30.81	Fides, 57.
505	Weisse X, 1006	9	- - -	- - - -	- - -	9 28 59.66	Fides, 57.
506	B. Z., 499, 138	9	- - -	- - - -	- - -	34 58 38.25	Comet 1853, III, 53.
507	(♃65) W.	9.5	- - -	- - - -	- - -	34 33 5.10	Comet 1853, III, 53.
508	Weisse X. 1075	8	- - -	- - - -	- - -	+10 58 7.76	Lutetia, 56.

XI hours.

509	B. Z., 499, 144	8	- - -	- - - -	0 52.43	- - - -	Comet 1858, V, 58.
510	B. Z., 357, 21	7	- - -	- - - -	2 18.11	+33 17 22.29	Comet 1852, II, 53.
511	Rumker, 3457	8	- - -	- - - -	- - -	8 39 1.76	Fides, 57.
512	B. Z., 357, 22	9	- - -	- - - -	4 31.79	33 22 31.26	Comet 1853, III, 53.
513	Weisse XI, 61	8	- - -	- - - -	5 25.35	10 37 32.51	Lutetia, 56.
514	B. Z., 357, 23	7	- - -	- - - -	5 43.61	34 12 25.12	Comet 1853, III, 53.
515	B. A. C., 3837	7	- - -	- - - -	- - -	8 49 33.92	Fides, 57.
516	B. Z., 501, 107	9	- - -	- - - -	7 40.05	32 55 23.15	Comet 1853, III, 53.
517	B. A. C., 3851	4	- - -	- - - -	10 42.40	+32 18 59.26	Comet 1853, III, 53.
518	Weisse XI, 217	9	- - -	- - - -	- - -	—11 54 32.97	Eunomia, 54.
519	Weisse XI, 233	8.5	- - -	- - - -	14 21.73	+ 4 58 30.75	Themis, 53.
520	Weisse XI, 234	8	- - -	- - - -	- - -	+ 7 59 25.14	Fides, 57.
521	Weisse XI, 253	9	- - -	- - - -	15 29.75	—11 53 5.80	Eunomia, 54.
522	Weisse XI, 258	8.5	- - -	- - - -	15 50.85	- - - -	Themis, 53.

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XI hours—Continued.

Number.	STAR.	Magnitude.	1850. α	1850. δ	1860. α	1860. δ	ASTEROIDS AND COMETS—COMPARED.
			m. s.	° ′ ″	m. s.	° ′ ″	
523	B. Z, 501, 120	9	- - -	- - - -	17 3.55	+31 46 37.14	Comet 1853, III, 53.
524	B. A. C., 3888	7	- - -	- - - -	18 38.26	4 37 50.44	Themis, 53.
525	Weisse XI, 318	7	- - -	- - - -	18 51.33	- - - -	Eunomia, 54.
526	B. A. C., 3892	7.5	- - -	- - - -	- - -	9 25 45.58	Lutetia, 56.
527	B. Z., 496, 49	8	- - -	- - - -	- - -	21 17 24.38	Egeria, 52.
528	Rumker, 3575	9	- - -	- - - -	19 11.21	- - - -	Egeria, 52.
529	Weisse XI, 381	7	- - -	- - - -	22 25.91	- - - -	Nemausa, 58.
530	Rumker, 3615	6	- - -	- - - -	24 13.03	+18 31 23.59	Egeria, 52.
531	Weisse XI. 412	8	- - -	- - - -	24 26.50	- - - -	Lutetia, 56. Nemausa, 58.
532	B. Z, 496, 59	8.5	- - -	- - - -	26 51.92	+22 47 47.90	Egeria, 52.
533	Rumker, 3636	9	- - -	- - - -	26 51.03	+15 40 0.30	Egeria, 52.
534	Weisse XI, 462	7	- - -	- - - -	27 14.14	— 4 45 15.44	Iris, 53.
535	Weisse XI, 466	8	- - -	- - - -	27 32.59	4 49 1.00	Iris, 53.
536	Weisse XI, 468	8	- - -	- - - -	27 36.90	4 10 51.34	Iris, 53.
537	Weisse XI, 488	9	- - -	- - - -	- - -	—13 41 17.04	Eunomia, 54.
538	B. Z, 457, 86	9	- - -	- - - -	27 45.44	- - - -	Egeria, 52.
539	B. A. C., 3937	6	- - -	- - - -	- - -	+28 33 16.07	Comet 1853, III, 53.
540	B. Z., 502, 106	8	- - -	- - - -	31 10.12	+20 52 30.89	Egeria, 51.
541	B. Z., 353, 57	8	- - -	- - - -	31 24.78	+24 6 15.84	Egeria, 52.
542	Anonymous	10	- - -	- - - -	32 38.75	— 5 19 58.97	Iris, 53.
543	B. Z., 500, 130	8	- - -	- - - -	32 52.15	+26 55 49.68	Comet 1853, III, 53.
544	Rumker, 3706	-	- - -	- - - -	35 26.80	+12 38 23.52	Egeria, 52.
545	Weisse XI, 618	9	- - -	- - - -	35 39.87	— 5 38 22.84	Iris, 53.
546	B. Z, 503, 11	7	- - -	- - - -	36 29.51	- - - -	Comet 1853, III, 53.
547	Rumker, 3715	7	- - -	- - - -	36 33.83	+17 5 54.96	Comet 1853, III, 53.
548	Weisse XI, 641	8	- - -	- - - -	36 58.05	—14 40 45.24	Eunomia, 54.
549	B. Z., 496, 73	7	- - -	- - - -	38 5.17	+20 40 5.50	Egeria, 51. Comet 1853, III, 53.
550	Weisse XI, 662	8	- - -	- - - -	38 12.27	- - - -	Nemausa, 58.
551	B. Z, 359, 32	7	- - -	- - - -	38 14.28	- - - -	Comet 1858, V, 58.
552	Rumker, 3738	-	- - -	- - - -	39 45.27	24 29 52.17	Egeria, 52.
553	B. Z, 496, 75	7	- - -	- - - -	40 13.22	20 48 37.52	Egeria, 51.
554	B. A. C., 3990	4	- - -	- - - -	40 45.54	20 59 49.04	Egeria, 51. Comet 1853, III, 53.
555	B. Z., 456, 121	7.5	- - -	- - - -	41 48.32	16 54 35.35	Calliope, 54.
556	B. Z., 456, 122	7	- - -	- - - -	42 0.68	17 1 23.83	Calliope, 54.
557	B. Z., 456, 124	9	- - -	- - - -	42 51.86	18 39 48.09	Calliope, 54.
558	(* 45) W.	-	- - -	- - - -	44 32.66	86 59 59.03	Comet 1852, II, 52.
559	B. Z, 456, 126	8.5	- - -	- - - -	45 58.42	17 37 43.61	Calliope, 54.
560	B. Z., 358, 29	7	- - -	- - - -	48 43.50	- - - -	Comet 1858, V, 58.
561	B. Z., 358, 30	8	- - -	- - - -	49 3.60	- - - -	Comet 1858, V, 58.
562	Weisse XI, 947	9	- - -	- - - -	55 35.47	8 36 12.66	Thetis, 52.
563	B. Z., 502, 138	7.5	- - -	- - - -	56 51.16	+19 35 51.66	Calliope, 54.

XII hours.

564	Weisse XI, 1023	9	- - -	- - - -	0 32.69	+ 7 32 51.67	Thetis, 52.
565	B. Z, 412. 6	9	- - -	- - - -	- - -	24 28 53.41	Egeria, 52.
566	Weisse XII, 16	9	- - -	- - - -	- - -	8 57 30.88	Melpomene, 58.
567	Weisse XII, 49	9	- - -	- - - -	- - -	8 8 56.43	Melpomene, 58.
568	Weisse XII, 63	8	- - -	- - - -	5 8.48	6 39 12.74	Thetis, 52.
569	Weisse XII, 91	9	- - -	- - - -	6 56.39	5 46 42.94	Egeria, 52.
570	Weisse XII, 119	9	- - -	- - - -	8 41.78	- - - -	Metis, 55.
571	Weisse XII, 130	8.5	- - -	- - - -	9 18.64	- - - -	Metis, 55.
572	Weisse XII, 144	8	- - -	- - - -	- - -	7 22 50.14	Melpomene, 58.
573	Weisse XII, 160	9	- - -	- - - -	11 0.14	5 52 21.74	Thetis, 52.
574	Rumker, 3907	9	- - -	- - - -	- - -	6 19 33.71	Thetis, 52.
575	Rumker, 3911	9	- - -	- - - -	12 47.35	6 26 55.03	Thetis, 52.
576	Weisse XII, 193	8	- - -	- - - -	- - -	6 26 53.57	Melpomene, 58.
577	B. A. C., 4168	6	- - -	- - - -	15 24.95	6 5 2.73	Melpomene, 58.
578	B. Z., 467, 59	8.5	- - -	- - - -	17 27.98	+22 56 43.78	Egeria, 52.
579	Weisse XII, 291	8.5	- - -	- - - -	- - -	— 4 5 5.80	Amphitrite, 58.
580	Rumker, 3966	9	- - -	- - - -	18 46.14	+ 4 58 32.69	Thetis, 52.

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XII hours—Continued.

Number.	STAR.	Magnitude.	1850. α	1850. δ	1860. α	1860. δ	ASTEROIDS AND COMETS—COMPARED.
			m. s.	° ′ ″	m. s.	° ′ ″	
581	(✡ 46) W.	-	- - -	- - - -	- - -	+86 4 58.53	Comet 1852, II, 52.
582	Weisse XII, 335	9	- - -	- - - -	20 47.20	— 6 47 31.76	Amphitrite, 54.
583	B. Z., 467, 62	8.5	- - -	- - - -	21 46.56	+22 46 44.11	Egeria, 52.
584	Weisse I, 359	8.5	- - -	- - - -	21 55.56	- - - -	Metis, 55.
585	Weisse XII, 360	9	- - -	- - - -	21 57.58	- - - -	Flora, 52.
586	Weisse XII, 390	9	- - -	- - - -	24 4.13	— 6 53 24.17	Amphitrite, 54.
587	Weisse XII, 402	7	- - -	- - - -	- - -	— 4 16 49.07	Amphitrite, 58.
588	Weisse XII, 409	8	- - -	- - - -	24 43.64	- - - -	Metis, 55.
589	B. Z., 467, 68	8.5	- - -	- - - -	25 8.64	+21 41 55.18	Egeria, 52.
590	Weisse XII, 416	9	- - -	- - - -	25 14.45	- - - -	Metis, 55.
591	Weisse XII, 433	9	- - -	- - - -	26 28.73	3 41 4.91	Thetis, 52.
592	Weisse XII, 463	8	- - -	- - - -	28 7.74	3 1 52.00	Thetis, 52.
593	Weisse XII, 494	7.5	- - -	- - - -	30 7.44	- - - -	Amphitrite, 54.
594	Weisse XII, 515	8.5	- - -	- - - -	31 23.02	0 59 17.14	Egeria, 52.
595	Weisse XII, 519	8	- - -	+14 37 57.56	31 32.21	+14 34 38.92	Hebe, 50.
596	B. A. C., 4257	5	- - -	— 7 10 9.99	32 1.36	- - - -	Amphitrite, 54.
597	Weisse XII, 549	8	- - -	- - - -	33 26.73	— 7 40 21.69	Amphitrite, 54.
598	Weisse XII, 564	9	- - -	- - - -	34 23.50	+ 2 45 58.51	Thetis, 52.
599	Weisse XII, 580	9	- - -	+14 58 58.28	35 0.54	14 55 40.02	Hebe, 50.
600	Weisse XII, 583	9	- - -	- - - -	35 14.83	2 23 9.04	Thetis, 52.
601	Weisse XII, 584	8.5	- - -	- - - -	35 19.61	2 5 57.30	Thetis, 52.
602	Weisse XII, 638	9	- - -	- - - -	38 9.92	+ 1 49 28.40	Thetis, 52.
603	Weisse XII, 661	8	- - -	- - - -	39 22.06	— 0 3 20.08	Egeria, 52.
604	Weisse XII, 665	9	- - -	- - - -	39 44.60	- - - -	Irene, 59.
605	Weisse XII, 668	8	- - -	- - - -	39 50.70	— 8 26 53.12	Amphitrite, 54.
606	Weisse XII, 706	9	- - -	14 51 20.84	41 48.82	+14 48 3.67	Hebe, 50.
607	B. A. C., 4301	6	- - -	14 56 32.17	41 53.14	14 53 15.45	Hebe, 50.
608	Weisse XII, 736	7	- - -	- - - -	43 33.37	- - - -	Harmonia, 56.
609	Weisse XII, 764	9	- - -	- - - -	45 17.54	+ 0 59 29.51	Thetis, 52.
610	Weisse XII, 803	9	- - -	- - - -	- - -	— 9 40 26.09	Amphitrite, 54.
611	Weisse XII, 819	8	- - -	- - - -	- - -	— 0 57 33.11	Harmonia, 56.
612	Weisse XII, 835	7	- - -	- - - -	49 15.57	- - - -	Harmonia, 56.
613	Weisse XII, 878	8	- - -	- - - -	51 48.45	- - - -	Harmonia, 56.
614	Lalande, 24193	8.5	- - -	- - - -	52 43.61	+ 0 31 34.54	Thetis, 52.
615	Weisse XII, 918	9	- - -	- - - -	- - -	—10 24 2.09	Amphitrite, 54.
616	Weisse XII, 929	8	- - -	13 58 38.21	54 25.61	+13 55 23.20	Hebe, 50.
617	Weisse XII, 933	9	- - -	+13 58 58.57	54 43.18	13 55 43.64	Hebe, 50.
618	(✡ 47) W.	-	- - -	- - - -	58 50.37	+83 41 18.72	Comet 1852, II, 52.

XIII hours.

619	Weisse XII, 1047	9	- - -	+12 59 50.84	- - -	+12 56 37.30	Hebe, 50.
620	Weisse XII, 1054	9	- - -	12 52 14.27	- - -	+12 49 0.58	Hebe, 50.
621	Weisse XIII, 33	9	- - -	- - - -	- - -	—11 10 49.75	Ariadne, 57.
622	Weisse XIII, 69	7	- - -	12 21 19.94	5 34.76	+12 18 7.01	Hebe, 50.
623	Weisse XIII, 87	9	- - -	- - - -	- - -	—10 48 36.67	Ariadne, 57.
624	Weisse XIII, 104	7	- - -	12 7 46.95	7 32.09	+12 4 34.96	Hebe, 50.
625	Weisse XIII, 181	9	- - -	- - - -	11 42.64	— 1 47 33.72	Thetis, 52.
626	Weisse XIII, 208	9	- - -	10 47 25.77	13 6.75	+10 44 15.39	Hebe, 50.
627	Weisse XIII, 294	9	- - -	- - - -	18 54.67	— 2 55 52.23	Thetis, 52.
628	Weisse XIII, 331	8	- - -	9 8 13.15	- - -	+ 9 5 4.59	Hebe, 50.
629	Weisse XIII, 365	6.5	- - -	7 57 19.47	- - -	7 54 11.83	Hebe, 50.
630	Weisse XIII, 370	8	- - -	8 11 30.02	23 21.82	8 8 22.44	Hebe, 50.
631	Weisse XIII, 392	9	- - -	8 49 49.84	- - -	8 46 42.65	Hebe, 50.
632	Weisse XIII, 413	9	- - -	7 7 26.81	- - -	7 4 19.90	Hebe, 50.
633	Weisse XIII, 458	9	- - -	5 40 58.64	27 41.27	5 37 52.45	Hebe, 50.
634	Weisse XIII, 472	8	- - -	+ 7 16 45.39	28 13.41	7 13 39.36	Hebe, 50.
635	(✡ 48) W.	-	- - -	- - - -	28 40.13	+80 48 55.26	Comet 1852, II, 52.
636	B. A. C., 4547	7	- - -	— 2 28 8.03	- - -	— 2 31 13.79	Comet 1850, I, 50.
637	Weisse XIII, 563	7	- - -	- - - -	33 8.51	4 32 7.00	Thetis, 52.
638	B. A. C., 4560	7	- - -	- - - -	33 32.48	—12 4 18.61	Ariadne, 57.
639	(✡ 49) W.	-	- - -	- - - -	36 40.45	+80 3 51.59	Comet 1852, II, 52.
640	Weisse XIII, 654	8	- - -	- - - -	38 22.26	- - - -	Ariadne, 57.

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XIII hours—Continued.

Number.	STAR.	Magnitude.	1850. α	1850. δ	1860. α	1860. δ	ASTEROIDS AND COMETS—COMPARED.
			m. s.	° ′ ″	m. s.	° ′ ″	
641	Weisse XIII, 674	9	- - -	- - - -	39 54.19	- - - -	Ariadne, 57.
642	B. Z., 414, 16	8	- - -	- - - -	- - -	34 0 32.34	Comet 1857, V, 57.
643	Anonymous	9	41 13.61	+22 45 57.24	- - -	- - - -	Comet 1849, III, 49.
644	B. Z, 463, 135	7	- - -	- - - -	41 26.07	- - - -	Comet 1857, V, 57.
645	B. Z., 470, 81	7.5	- - -	- - - -	42 34.33	- - - -	Comet 1857, V, 57.
646	(✡ 50) W.	-	- - -	- - - -	- - -	78 21 58.77	Comet 1852, II, 52.
647	Weisse XIII, 737	8.5	- - -	+14 14 1.48	43 16.08	14 11 1.01	Comet 1850, I, 50.
648	B. Z, 412, 139	9	- - -	- - - -	46 17.48	- - - -	Comet 1858, V, 58.
649	B. Z., 466, 47	8	- - -	- - - -	46 20.93	36 22 20.24	Comet 1857, V, 57.
650	Weisse XIII, 797	8	- - -	- - - -	- - -	+10 55 33.85	Comet 1857, V, 57.
651	Weisse XIII, 808	8.5	- - -	- - - -	47 42.49	—11 45 33.38	Proserpine, 53.
652	(✡ 51) W.	- -	- - -	- - - -	- - -	+77 50 54.23	Comet 1852, II, 52.
653	Weisse XIII, 813	9	- - -	- - - -	48 2.86	—11 32 2.87	Proserpine, 53.
654	Weisse XIII, 866	9	- - -	- - - -	50 57.41	—13 26 16.83	Victoria, 53.
655	Rumker, 4529	6	- - -	+25 44 3.09	51 1.49	+25 41 6.27	Comet 1850, I, 50.
656	Weisse XIII, 893	9	- - -	- - - -	52 34.77	—12 1 29.85	Victoria, 53. Proserpine, 53.
657	(✡ 52) W.	- -	- - -	- - - -	53 50.23	- - - -	Comet 1852, II, 52.
658	B. Z., 412, 151	9	54 30.63	23 55 56.47	- - -	- - - -	Comet 1849, III, 49.
659	Rumker, 4551	8	- - -	+22 42 20.96	- - -	+22 39 24.57	Comet 1850, I, 50.
660	Lalande, 26762	8	- - -	- - - -	55 0.71	—13 40 47.65	Victoria, 53.
661	Weisse XIII, 974	9	- - -	- - - -	56 32.05	—14 48 37.57	Victoria, 53.
662	Weisse XIII, 979	8.5	- - -	- - - -	56 42.60	11 27 17.35	Victoria, 53.
663	Weisse XIII, 1037	9	- - -	- - - -	59 11.29	—13 25 34.37	Proserpine, 53.

XIV hours.

Number.	STAR.	Magnitude.	1850. α	1850. δ	1860. α	1860. δ	ASTEROIDS AND COMETS—COMPARED.
664	Weisse XIII, 1071	7	- - -	- - - -	0 59.14	—11 9 43.93	Victoria, 53.
665	(✡) Anon.	9	1 8.21	+34 7 4.06	- - -	- - - -	Comet 1850, I, 50,
666	B. Z., 462, 78	7	- - -	- - - -	1 50.33	+24 58 53.22	Pallas, 53.
667	(✡ 56) W.	- -	- - -	- - - -	1 56.18	- - - -	Comet 1852, II, 52.
668	B. A. C., 4700	5.5	- - -	- - - -	3 11.98	—15 38 20.08	Victoria, 53.
669	B. Z., 354, 9	9	- - -	- - - -	3 13.04	+23 49 7.96	Pallas, 53.
670	Weisse XIV, 83	9	- - -	- - - -	6 3.59	- - - -	Psyche, 58.
671	Weisse XIV, 88	9	- - -	- - - -	6 12.78	— 8 28 46.74	Psyche, 53.
672	Lalande, 26054	8	- - -	- - - -	6 30.64	16 48 24.50	Victoria, 53.
673	Weisse XIV, 130	8.5	- - -	- - - -	8 32.26	8 43 25.24	Psyche, 53.
674	Weisse XIV, 174	9	- - -	- - - -	10 38.52	4 29 37.31	Astræa, 51.
675	(✡) Anon.	- -	- - -	+41 6 0.81	- - -	- - - -	Comet 1850, I, 50.
676	Lalande, 26172	7.5	- - -	- - - -	11 41.74	—17 52 32.87	Victoria, 53.
677	B. Z., 462, 88	8.5	- - -	- - - -	11 57.98	+24 38 50.74	Pallas, 53.
678	A. Z., 301, 20	7.8	- - -	- - - -	12 38.64	—23 51 41.28	Euphrosyne, 57.
679	Weisse XIV, 221	9	- - -	- - - -	12 53.75	- - - -	Ceres, 53.
680	Lalande, 26210	8	- - -	- - - -	13 4.35	—18 41 20.00	Victoria, 53.
681	Weisse XIV, 257	9	- - -	- - - -	14 46.68	— 4 40 6.49	Astræa, 51.
682	Weisse XIV, 252	9	- - -	- - - -	- - -	+ 9 15 14.07	Psyche, 53.
683	Lalande, 26293	8	- - -	- - - -	16 38.51	—19 2 46.87	Victoria, 51.
684	Rumker, 4697	5.5	- - -	- - - -	18 48.43	+ 1 37 41.02	Phocea, 53.
685	Anon.	8.5	- - -	+47 27 3.76	- - -	- - - -	Comet 1850, I, 50.
686	Weisse XIV, 362	8	- - -	- - - -	20 7.19	- - - -	Irene, 55.
687	Weisse XIV, 371	8	- - -	- - - -	20 46.25	- - - -	Irene, 55.
688	B. A. C., 4798	6.5	- - -	- - - -	22 42.37	+ 1 27 18.10	Phocea, 53.
689	Weisse XIV, 422	9	- - -	- - - -	23 36.69	— 3 10 26.96	Ceres, 53.
690	Weisse XIV, 423	8	- - -	- - - -	23 41.53	— 5 10 40.90	Astræa, 51.
691	A. Z., 301, 35	7	- - -	- - - -	- - -	—23 56 9.58	Euphrosyne, 57.
692	Rumker, 4730	9	- - -	- - - -	24 15.37	+ 1 32 3.80	Phocea, 53.
693	(✡) Anon.	9	- - -	+49 12 38.98	24 39.39	- - - -	Comet 1850, I, 50.
694	Weisse, XIV, 445	8	- - -	- - - -	24 49.97	- - - -	Irene, 55.
695	Rumker, 4739	- -	- - -	- - - -	- - -	+ 1 28 6.65	Phocea, 53.
696	B. A. C., 4814	7	- - -	- - - -	26 58.26	—19 49 21.52	Victoria, 53.
697	Anon.	9	- - -	+50 59 6.74	- - -	- - - -	Comet 1850, I, 50.
698	Weisse XIX, 503	8	- - -	- - - -	28 5.79	5 13 3.65	Astræa, 51.
699	Weisse XIX, 519	9	- - -	- - - -	28 53.38	— 3 10 5.48	Ceres, 53.
700	Rumker, 4761	- -	- - -	- - - -	29 26.10	+ 1 40 4.59	Phocea, 53.

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XIV hours—Continued.

Number.	STAR.	Magnitude.	1850. α	1850. δ	1860. α	1860. δ	ASTEROIDS AND COMETS—COMPARED.
			m. s.	° ′ ″	m. s.	° ′ ″	
701	Weisse XIV, 540	8	- - -	- - - -	29 50.83	— 3 16 46.29	Ceres, 53.
702	Weisse XIV, 606	9	- - -	- - - -	33 36.47	5 51 19.16	Astræa, 51.
703	Weisse XIV, 608	9	- - -	- - - -	33 45.50	10 45 39.41	Psyche, 58.
704	A. Z., 301, 47	7.5	- - -	- - - -	34 50.49	23 53 25.99	Euphrosyne, 57.
705	Weisse XIV, 668	8	- - -	- - - -	37 0.76	— 5 47 35.98	Astræa, 51.
706	B. A. C., 4869	6.5	- - -	- - - -	38 22.47	+ 1 18 38.95	Phocea, 53.
707	Weisse XIV, 759	8	- - -	- - - -	41 16.14	— 6 31 14.04	Astræa, 51.
708	Weisse XIV, 787	9	- - -	- - - -	42 38.71	6 34 49.45	Astræa, 51.
709	Weisse XIV, 793	7.5	- - -	- - - -	- - -	—11 26 9.11	Psyche, 58.
710	Rumker, 4840	- -	- - -	- - - -	45 49.47	+ 1 18 32.23	Phocea, 53.
711	Weisse XIV, 872	8	- - -	- - - -	46 35.94	- - - -	Melpomene, 55.
712	Weisse XIV, 874	8	- - -	- - - -	46 39.06	- - - -	Melpomene, 55.
713	G. 12 Y., 2168	9	- - -	- - - -	50 49.45	+43 25 32.02	Comet 1851, II, 51.
714	B. Z., 473, 106	8	- - -	- - - -	52 57.91	43 58 29.92	Comet 1851, II, 51.
715	A. Z., 7, 26	9	53 29.29	+59 7 6.53	- - -	- - - -	Comet 1850, I, 50.
716	B. Z, 473, 108	9	- - -	- - - -	53 53.07	43 53 49.50	Comet 1851, II, 51.
717	B. A. C., 4944	6	- - -	- - - -	- - -	0 24 59.17	Phocea, 53.
718	Weisse XIV, 1016	9	- - -	—11 8 46.44	- - -	- - - -	Parthenope, 50.
719	Σ Cat. G., 1683	7	- - -	- - - -	57 9.59	- - - -	Comet 1858, V, 58.
720	Weisse XIV, 1072	9	- - -	—11 48 22.05	- - -	- - - -	Parthenope, 50.
721	A. Z., 111, 119	9	- - -	- - - -	- - -	+45 11 37.15	Comet 1851, II, 51.

XV hours.

722	Weisse XIV, 1131	9	- - -	- - - -	0 19.58	+ 0 27 22.24	Phocea, 53.
723	Weisse XIV, 1142	8	- - -	- - - -	0 50.86	+ 0 29 2.70	Phocea, 53.
724	Weisse XIV, 1150	7	- - -	- - - -	1 19.50	—13 27 40.79	Thalia, 54.
725	Weisse XV, 2	8.5	- - -	- - - -	1 55.46	- - - -	Melpomene, 55.
726	B. A. C., 4995	5.5	- - -	—19 13 12.66	- - -	- - - -	Iris, 50.
727	Weisse XV, 79	7.5	- - -	- - - -	6 3.25	13 29 46.41	Thalia, 54.
728	Weisse XV, 91	7	- - -	- - - -	6 34.13	13 40 58.71	Thalia, 54.
729	A. Z., 303, 47	8	- - -	—18 37 4.01	- - -	- - - -	Iris, 50.
730	Weisse XV, 210	9	- - -	- - - -	12 37.01	—13 27 25.83	Thalia, 54.
731	Weisse XV, 221	9	- - -	- - - -	- - -	—13 18 38.89	Thalia, 54.
732	Weisse XV, 249	9	- - -	—14 20 13.74	- - -	- - - -	Parthenope, 50.
733	Weisse XV, 265	8	15 10.31	13 48 34.75	- - -	- - - -	Parthenope, 50.
734	Weisse XV, 281	8	15 45.62	13 46 18.16	- - -	- - - -	Parthenope, 50.
735	A. Z, 209, 48	7.5	- - -	20 50 55.00	- - -	- - - -	Iris, 50.
736	A. Z, 209, 61	6	- - -	—22 38 23.30	- - -	- - - -	Iris, 50.
737	Anon.	10	- - -	+64 54 17.78	- - -	- - - -	Comet 1850, I, 50.
738	Weisse XV, 400	8	21 35.10	—14 17 35.86	- - -	- - - -	Parthenope, 50.
739	A. Z, 209, 54	7.5	- - -	21 27 4.54	- - -	- - - -	Iris, 50.
740	B. A. C., 5109	6.5	- - -	—19 9 18.97	- - -	- - - -	Iris, 50.
741	Anon.	9.5	28 5.00	—22 6 4.82	- - -	- - - -	Iris, 50.
742	Anon.	9	28 24.00	22 24 27.41	- - -	- - - -	Iris, 50.
743	A. Z., 209, 82	7.5	- - -	22 23 11.01	- - -	- - - -	Iris, 50.
744	A. Z., 208, 52	7.5	- - -	20 33 4.97	- - -	- - - -	Iris, 50.
745	Lalande, 28453	7	- - -	- - - -	30 44.11	—17 12 6.78	Irene, 51.
746	A. Z., 209, 63	7	- - -	22 39 17.94	- - -	- - - -	Iris, 50.
747	Weisse XV, 585	8.5	- - -	- - - -	- - -	1 19 28.15	Phocea, 53.
748	Weisse XV, 620	9	- - -	- - - -	32 58.46	1 52 12.40	Phocea, 53.
749	Anon.	10	33 34.46	—15 38 17.20	- - -	- - - -	Parthenope, 50.
750	Weisse XV, 637	9	- - -	- - - -	33 48.44	—15 6 20.05	Irene, 51.
751	Weisse XV, 644	9	- - -	- - - -	34 9.95	—15 6 51.55	Irene, 51.
752	B. A. C., 5184	7	- - -	—15 31 42.43	34 54.10	15 33 41.23	Parthenope, 50. Irene, 51.
753	(* 8) W.	9	- - -	- - - -	35 6.52	- - - -	Irene, 51.
754	Lalande, 28617	7	- - -	- - - -	36 1.02	16 25 21.50	Irene, 51.
755	Anon.	9	36 1.26	15 55 19.82	- - -	- - - -	Parthenope, 50.
756	Lalande, 28697	7	- - -	16 28 33.13	- - -	- - - -	Parthenope, 50.
757	A. Z., 387, 6	8.5	- - -	23 1 52.81	- - -	- - - -	Iris, 50.
758	Weisse XV, 744	8	- - -	- - - -	39 14.66	14 47 51.60	Irene, 51.
759	Lalande, 28726	8	- - -	- - - -	39 20.50	—17 39 8.26	Irene, 51.
760	B. A. C., 5220	7	- - -	—23 21 57.35	- - -	- - -	Iris, 50.

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XV hours—Continued.

Number.	STAR.	Magnitude.	1850. α	1850. δ	1860. α	1860. δ	ASTEROIDS AND COMETS—COMPARED.
			m. s.	° ′ ″	m. s.	° ′ ″	
761	Lalande, 28766	8	- - -	- - - -	41 4.25	—18 16 15.46	Irene, 51.
762	Weisse XV, 792	9	- - -	- - - -	- - -	14 23 36.88	Irene, 51.
763	Lalande, 28838	7	- - -	- - - -	43 34.80	18 30 42.06	Irene, 51.
764	Weisse XV, 844	6	- - -	- - - -	- - -	2 39 49.95	Phocea, 53.
765	Weisse XV, 845	9	- - -	- - - -	44 7.66	14 12 41.44	Irene, 51.
766	Weisse XV, 848	8	- - -	- - - -	44 17.89	- - - -	Comet 1858, V, 58.
767	Weisse XV, 864	8	- - -	- - - -	45 26.55	14 17 33.86	Irene, 51.
768	B. A. C, 5254	6.5	- - -	—24 31 35.41	- - -	- - - -	Iris, 50.
769	(☿ 66) W.	-	- - -	- - - -	46 6.51	- - - -	Phocea, 53.
770	B. A. C., 26	7	- - -	- - - -	46 55.09	—18 57 58.85	Irene, 51.
771	Anonymous	9	46 55.17	—16 48 35.65	- - -	- - - -	Parthenope, 50.
772	Weisse XV, 939	9	- - -	- - - -	49 44.78	— 2 34 45.97	Phocea, 53.
773	Lalande, 29043	8	- - -	- - - -	50 59.47	19 31 46.60	Irene, 51.
774	Lalande, 29044	8	- - -	- - - -	51 0.32	19 31 59.88	Irene, 51.
775	G. C., 1315	7	- - -	- - - -	- - -	—18 26 52.66	Irene, 51.
776	Weisse XV, 1092	7	- - -	- - - -	58 2.57	- - - -	Phocea, 53.
777	Anonymous	9	58 40.68	+70 7 20.67	- - -	- - - -	Comet 1850, I, 50.
778	Lalande, 29306	8	- - -	—17 31 36.01	- - -	- - - -	Parthenope, 50.
779	B. A. C., 5343	7	- - -	—24 3 15.17	- - -	- - - -	Iris, 50.
780	A. Z., 114, 4	9	59 32.56	+69 37 49.67	- - -	- - - -	Comet 1850, I, 50.
781	A. Z, 114, 5	9	59 53.92	+69 38 35.28	- - -	- - - -	Comet 1850, I, 50.
782	Anonymous	-	59 42.76	- - - -	- - -	- - - -	Comet 1850, I, 50.

XVI hours.

Number.	STAR.	Magnitude.	1850. α	1850. δ	1860. α	1860. δ	ASTEROIDS AND COMETS—COMPARED.
783	Weisse XVI, 11	8.5	- - -	- - - -	2 16.60	— 3 10 26.25	Phocea, 53.
784	Weisse XVI, 19	6	- - -	- - - -	2 31.10	3 5 41.87	Phocea, 53.
785	Anonymous	9.5	3 11.60	+70 17 54.18	- - -	- - - -	Comet 1850, I, 50.
786	B. A. C., 5395	7	- - -	- - - -	- - -	21 2 20.05	Irene, 51.
787	Groombridge, 2319	7.5	- - -	+70 39 44.73	- - -	- - - -	Comet 1850, I, 50.
788	(☿ 9) W.	7	- - -	- - - -	6 15.23	—20 44 50.22	Irene, 51.
789	B. A. C., 2408	7	- - -	—18 8 44.58	- - -	- - - -	Parthenope, 50.
790	A. Z, 210, 43	8.5	- - -	—24 44 7.10	7 19.42	- - - -	Iris, 50.
791	A. Z, 115, 156	9	8 20.58	+70 43 25.87	- - -	- - - -	Comet 1850, I, 50.
792	(☿ 10) W.	9	- - -	- - - -	- - -	—21 14 45.48	Irene, 51.
793	Lalande, 29696	7	- - -	—18 27 33.26	- - -	- - - -	Parthenope, 50.
794	(☿ 11) W.	9	- - -	- - - -	- - -	21 30 1.26	Irene, 51.
795	A. Z, 297, 84	6	- - -	- - - -	14 51.86	- - - -	Comet 1858, V, 58.
796	B. A. C., 5467	5	- - -	—19 40 47.87	- - -	- - - -	Parthenope, 50.
797	A. Z., 115, 164	8.5	- - -	+71 12 17.36	- - -	- - - -	Comet 1850, I, 50.
798	A. Z., 115, 165	8.5	- - -	71 18 34.33	- - -	- - - -	Comet 1850, I, 50.
799	Lalande, 30099	7	- - -	- - - -	- - -	— 3 57 38.95	Phocea, 53.
800	Groombridge, 2356	7	- - -	+71 43 5.56	- - -	- - - -	Comet 1850, I, 50.
801	Lalande, 30207	8	- - -	- - - -	- - -	—22 36 19.85	Irene, 51.
802	B. A. C., 5580	7	- - -	—19 37 54.36	- - -	- - - -	Parthenope, 50.
803	B. A. C., 5598	7	- - -	- - - -	- - -	22 51 40.54	Irene, 51.
804	B. A. C., 5606	7	- - -	- - - -	- - -	22 55 9.08	Irene, 51.
805	Lalande, 30479	8	- - -	19 49 14.30	- - -	- - - -	Parthenope, 50.
806	Lalande, 30556	7.5	- - -	—26 28 29.32	- - -	- - - -	Venus, 50.
807	A. Z., 210, 78	7	- - -	- - - -	41 13.27	- - - -	Comet 1858, V, 58.
808	Weisse XVI, 792	9	- - -	- - - -	- - -	4 53 52.96	Phocea, 53.
809	Lalande, 30600	9	- - -	- - - -	- - -	19 35 33.06	Vesta, 51.
810	Lalande, 30641	8	- - -	- - - -	- - -	—19 6 53.94	Vesta, 51.
811	Lalande, 30671	8.5	- - -	- - - -	45 4.52	— 4 54 42.16	Phocea, 53.
812	B. A. C., 5663	6	- - -	20 9 34.27	- - -	- - - -	Parthenope, 50.
813	B. A. C., 5680	6	- - -	- - - -	- - -	23 16 43.37	Irene, 51.
814	Weisse XVI, 912	9	- - -	- - - -	- - -	4 56 20.14	Phocea, 53.
815	A. Z., 214, 54	8.5	- - -	—26 52 23.71	- - -	- - - -	Venus, 50.
816	Lalande, 30788	8	- - -	- - - -	- - -	21 33 2.76	Vesta, 51.
817	B. A. C., 5730	7	- - -	- - - -	- - -	24 2 11.46	Irene, 51.
818	B. A. C., 5742	7	- - -	- - - -	- - -	—24 2 20.02	Irene, 51.
819	Anonymous	9.5	- - -	+73 9 5.84	- - -	- - - -	Comet 1850, I, 50.
820	B. A. C., 5769	7	- - -	+73 21 10.88	- - -	- - - -	Comet 1850, I, 50.

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XVII hours.

Number.	STAR.	Magnitude.	1850. α	1850. δ	1860. α	1860. δ	ASTEROIDS AND COMETS—COMPARED.
			m. s.	° ′ ″	m. s.	° ′ ″	
821	B. A. C, 5771	6	- - -	- - - -	- - -	—17 25 10.61	Vesta, 51.
822	(* 12) W.	-	- - -	- - - -	- - -	24 10 26.11	Irene, 51.
823	Groombridge, 2418	8	- - -	+73 24 11.73	- - -	- - - -	Comet 1850, I, 50.
824	Groombridge, 2420	8	4 29.67	+73 31 10.47	- - -	- - - -	Comet 1850, I, 50.
825	B. A. C., 5827	4	- - -	- - - -	9 28.54	24 7 48.51	Irene, 51.
826	B. A. C., 5829	7	- - -	- - - -	9 28.48	27 7 39.50	Irene, 51.
827	Weisse XVII, 202	7	- - -	- - - -	12 30.03	5 45 42.26	Phocea, 53.
828	B. A. C., 5846	7	- - -	- - - -	- - -	24 45 37.94	Irene, 51.
829	B. A. C, 5851	3	- - -	- - - -	13 24.79	24 51 20.76	Irene, 51.
830	Weisse XVII, 254	8.5	- - -	- - - -	15 11.92	— 6 11 10.21	Phocea, 53.
831	Anonymous	9.5	17 42.89	+73 35 52.72	- - -	- - - -	Comet 1850, I, 50.
832	Weisse XVII, 409	9	- - -	- - - -	22 18.25	— 5 58 17.41	Phocea, 53.
833	Lalande, 7325	7	- - -	- - - -	23 15.05	- - - -	Egeria, 57.
834	Madras, 1165	8	- - -	- - - -	- - -	24 31 40.15	Irene, 51.
835	Lalande, 32045	8	- - -	- - - -	29 18.08	24 52 34.18	Irene, 51.
836	Lalande, 7371	7	- - -	—27 56 59.02	- - -	- - - -	Venus, 50.
837	A. Z., 211, 108	9	- - -	- - - -	34 8.06	19 19 41.02	Flora, 56.
838	A. Z., 211, 109	9	- - -	- - - -	34 52.93	19 26 10.94	Flora, 56.
839	Lalande, 32418	8	- - -	- - - -	39 5.79	25 7 57.14	Irene, 51.
840	Weisse XVII, 787	8	- - -	- - - -	- - -	13 33 7.49	Melpomene, 52.
841	Weisse XVII, 810	9	- - -	- - - -	- - -	—11 17 24.30	Melpomene, 52.
842	(* 32) W.	-	- - -	- - - -	- - -	10 51 40.22	Melpomene, 52.
843	Weisse XVII, 834	8	- - -	- - - -	42 33.02	12 6 52.79	Melpomene, 52.
844	Weisse XVII, 835	9	- - -	- - - -	42 38.33	12 53 24.18	Melpomene, 52.
845	Lalande, 32559	8	- - -	- - - -	- - -	25 43 49.00	Irene, 51.
846	Weisse XVII, 856	8.5	- - -	- - - -	43 38.35	13 55 30.02	Melpomene, 52.
847	Weisse XVII, 867	9	- - -	- - - -	- - -	14 59 7.65	Melpomene, 52.
848	B. A. C., 6041	7	- - -	- - - -	- - -	19 4 49.53	Flora, 56.
849	B. A. C., 6049	6	- - -	- - - -	45 16.83	—10 51 41.19	Melpomene, 52.
850	B. A. C., 6063	6.5	- - -	—28 2 7.18	- - -	- - - -	Venus, 50.
851	Weisse XVII, 966	8.5	- - -	- - - -	- - -	—15 9 23.55	Melpomene, 52.
852	B. A. C., 6065	6	- - -	- - - -	- - -	15 47 1.29	Melpomene, 52.
853	Madras, 1209	8	- - -	- - - -	- - -	15 39 33.86	Melpomene, 52.
854	Lalande, 32986	8.5	- - -	- - - -	54 5.76	16 13 9.15	Melpomene, 52.
855	A. Z., 223, 38	8	- - -	27 50 10.44	- - -	- - - -	Venus, 50.
856	Lalande, 33178	9.5	- - -	- - - -	59 6.61	—16 40 1.91	Melpomene, 52.

XVIII hours.

Number.	STAR.	Magnitude.	1850. α	1850. δ	1860. α	1860. δ	ASTEROIDS AND COMETS—COMPARED.
857	A. Z., 223, 46	8	- - -	—27 45 3.07	- - -	- - - -	Venus, 50.
858	(✡ 33) W.	-	- - -	- - - -	2 37.29	—17 13 34.14	Melpomene, 52.
859	B. A. C., 6161	6	- - -	- - - -	3 10.72	23 43 32.44	Eunomia, 51.
860	(✡ 34) W.	-	- - -	- - - -	6 29.20	—17 23 55.27	Melpomene, 52.
861	6194, B. A. C.	5.5	- - -	—27 5 28.52	- - -	- - - -	Venus, 50.
862	(✡ 15) W.	8	- - -	- - - -	9 4.29	—23 38 7.45	Eunomia, 51.
863	Lalande, 33684	8	- - -	- - - -	11 23.89	23 22 5.72	Eunomia, 51.
864	Lalande, 33694	7.5	- - -	- - - -	11 39.93	17 48 15.04	Melpomene, 52.
865	B. A. C., 6222	7	- - -	- - - -	13 33.66	22 58 54.56	Eunomia, 51.
866	Lalande, 33966	8	- - -	- - - -	18 15.13	18 9 43.17	Melpomene, 52.
867	(✡ 18) W.	9	- - -	- - - -	- - -	22 29 43.60	Eunomia, 51.
868	B. A. C, 6266	7	- - -	- - - -	19 37.40	23 4 54.30	Eunomia, 51.
869	(✡ 16) W.	9	- - -	- - - -	- - -	22 54 7.99	Eunomia, 51.
870	(✡ 17) W.	9	- - -	- - - -	21 13.80	22 46 10.74	Eunomia, 51.
871	B. A. C., 6293	6.5	- - -	- - - -	- - -	18 21 18.19	Melpomene, 52.
872	B. A. C., 6294	6	- - -	- - - -	- - -	18 29 41.28	Melpomene, 52.
873	Lalande, 34222	9	- - -	- - - -	24 4.37	22 23 20.44	Eunomia, 51.
874	Lalande, 34229	8	- - -	- - - -	24 18.74	22 13 56.50	Eunomia, 51.
875	Lalande, 34354	7.5	- - -	- - - -	27 24.02	18 39 25.76	Melpomene, 52.
876	Lalande, 34401	7.5	- - -	- - - -	- - -	18 53 48.29	Melpomene, 52.
877	(✡ 19) W.	9	- - -	- - - -	- - -	21 48 46.73	Eunomia, 51.
878	B. A. C., 6336	6	- - -	- - - -	29 31.35	- - - -	Eunomia, 51.
879	(✡ 35) W.	-	- - -	- - - -	30 29.02	18 53 59.57	Melpomene, 52.
880	(✡ 20) W.	9	- - -	- - - -	- - -	—21 46 55.37	Eunomia, 51.

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XVIII hours—Continued.

Number.	STAR.	Magnitude.	1850. α	1850. δ	1860. α	1860. δ	ASTEROIDS AND COMETS—COMPARED.
			m. s.	° ′ ″	m. s.	° ′ ″	
881	(✡ 36) W.	- -	- - -	- - - -	- - -	—18 53 52.89	Melpomene, 52.
882	(✡ 21) W.	9	- - -	- - - -	- - -	21 29 58.46	Eunomia, 51.
883	Madras, 1304	9	- - -	- - - -	- - -	19 17 1.57	Melpomene, 52.
884	B. A. C., 6454	6	- - -	- - - -	- - -	20 50 7.49	Eunomia, 51.
885	B. A. C., 6461	4	- - -	- - - -	- - -	21 17 12.72	Eunomia, 51.
886	A Z, 224, 110	8.5	- - -	—22 1 38.16	- - -	- - - -	Hygeia, 50.
887	Anonymous	- -	52 9.22	22 2 52.08	- - -	- - - -	Hygeia, 50.
888	Weisse XVIII, 1344	9	- - -	- - - -	53 30.26	- - - -	Hebe, 51.
889	Lalande, 35468	8	- - -	- - - -	54 0.33	17 3 2.47	Hebe, 51.
890	(✡ 22) W.	9	- - -	- - - -	- - -	20 36 23.90	Eunomia, 51.
891	Lalande, 35497	6.5	- - -	- - - -	- - -	—19 26 37.02	Melpomene, 53.
892	B. A. C., 6507	4	- - -	21 57 23.02	56 17.48	- - - -	Hygeia, 50. Massilia, 55.
893	B. Z., 299, 167	7	- - -	- - - -	57 41.82	- - - -	Phocea, 57.
894	A. Z., 224, 121	9	- - -	—21 39 1.58	- - -	- - - -	Hygeia, 50.

XIX hours.

895	B. A. C., 6536	6.5	- - -	- - - -	- - -	—19 30 20.08	Melpomene, 52.
896	Weisse XVIII, 1547	8	- - -	- - - -	0 34.18	13 10 18.85	Hebe, 51.
897	B. A. C., 6548	4	- - -	—21 15 24.13	- - -	- - - -	Hygeia, 50.
898	B. A. C., 6550	7	- - -	- - - -	1 32.64	20 1 15.30	Eunomia, 51.
899	Lalande, 36087	8	- - -	- - - -	7 11.21	20 1 27.94	Eunomia, 51.
900	Madras, 1351	8.5	- - -	21 19 56.53	- - -	- - - -	Hygeia, 50.
901	B. A. C., 6616	7	- - -	- - - -	- - -	19 29 33.05	Eunomia, 51.
902	Weisse XIX, 315	9	- - -	- - - -	13 39.85	10 25 3.68	Hebe, 51.
903	G. 12 Y., 1719	8	- - -	20 55 5.66	- - -	- - - -	Hygeia, 50.
904	(✡ 23) W.	9	- - -	- - - -	16 53.92	19 19 26.51	Eunomia, 51.
905	Anonymous	10	19 2.99	21 0 7.52	- - -	- - - -	Hygeia, 50.
906	A. Z., 241, 24	8	- - -	- - - -	23 19.15	28 30 12.44	Amphitrite, 55.
907	A. Z., 241, 26	8	- - -	- - - -	- - -	28 2 27.77	Amphitrite, 55.
908	Lalande, 36857	8	- - -	- - - -	- - -	19 40 36.33	Melpomene, 52.
909	A. Z., 241, 27	9	- - -	- - - -	- - -	27 24 41.04	Amphitrite, 55.
910	Lalande, 36878	9	- - -	20 42 43.34	- - -	- - - -	Hygeia, 50.
911	(✡ 38) W.	- -	- - -	- - - -	26 57.12	19 52 7.29	Melpomene, 52.
912	B. A. C., 6707	7	- - -	- - - -	28 16.16	19 9 29.65	Eunomia, 51.
913	B. A. C., 6710	7	- - -	18 33 33.25	28 55.73	18 32 18.29	Eunomia, 51.
914	A. Z., 235, 40	8	- - -	- - - -	29 7.38	29 7 21.32	Amphitrite, 55.
915	A Z., 310, 173	9	- - -	20 38 23.58	- - -	- - - -	Hygeia, 50.
916	Lalande, 37221	8	- - -	22 24 0.58	- - -	- - - -	Hygeia, 50.
917	Madras, 1417	8	- - -	20 53 10.99	- - -	- - - -	Hygeia, 50.
918	A. Z., 394, 36	9	- - -	- - - -	33 6.78	26 42 20.83	Amphitrite, 55.
919	A Z, 394, 37	8	- - -	- - - -	- - -	26 46 3.77	Amphitrite, 55.
920	Lalande, 37507	8.5	- - -	21 52 56.52	- - -	- - - -	Hygeia, 50.
921	B. A. C., 6760	5	- - -	20 7 0.71	- - -	- - - -	Hygeia, 50.
922	A. Z., 239, 69	9	- - -	- - - -	39 34.97	26 14 14.37	Amphitrite, 55.
923	Anonymous	9.5	45 41.87	22 7 38.16	- - -	- - - -	Hygeia, 50.
924	Lalande, 37873	8	- - -	19 40 53.16	- - -	- - - -	Hygeia, 50.
925	(✡ 24) W.	9	- - -	- - - -	49 27.11	17 27 17.08	Eunomia, 51.
926	Lalande, 38140	8	- - -	- - - -	- - -	17 14 54.96	Eunomia, 51.
927	Lalande, 38164	8	- - -	- - - -	53 53.64	19 28 56.91	Melpomene, 52.
928	B. A. C., 6888	7	- - -	- - - -	56 39.14	- - - -	Mars, 60.
929	Lalande, 38290	8.5	- - -	19 11 28.24	- - -	- - - -	Hygeia, 50.
930	Madras, 1483	8	- - -	—16 47 37.87	- - -	—16 45 59.58	Eunomia, 51.

XX hours.

931	B. A. C., 6903	7	- - -	—19 13 59.89	- - -	- - - -	Hygeia, 50.
932	B. A. C., 6923	7	- - -	19 48 54.52	2 18.36	—19 47 14.75	Melpomene, 52.
933	A. C., 20378	9	- - -	- - - -	9 58.03	- - - -	Europa, 60.
934	A. C., 20388	8	- - -	- - - -	10 42.90	- - - -	Europa, 60.

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XX hours—Continued.

Number.	STAR.	Magnitude.	1850. α	1850. δ	1860. α	1860. δ	ASTEROIDS AND COMETS—COMPARED.
			m. s.	° ′ ″	m. s.	° ′ ″	
935	B. A. C., 6981	5.5	- - -	—19 34 57.06	11 18.70	—19 33 7.35	Melpomene, 52.
936	A. Z., 240, 89	7	- - -	23 56 50.89	- - -	23 55 0.37	Flora, 53.
937	Lalande, 39247	8	- - -	15 27 53.54	18 12.50	15 25 59.81	Eunomia, 51.
938	A. Z., 240, 97	8.5	- - -	23 30 16.92	19 53.24	23 28 20.82	Flora, 53.
939	B. A. C., 7049	6	- - -	- - - -	21 17.98	- - - -	Flora, 53.
940	A. Z., 240, 98	8	- - -	- - - -	21 23.46	23 18 29.13	Flora, 53.
941	B. A. C., 7053	7	- - -	- - - -	- - -	19 2 47.32	Melpomene, 52.
942	B. A. C., 7054	6	- - -	19 4 25.15	- - -	19 2 35.30	Melpomene, 52.
943	A. Z, 247, 54	8	- - -	23 0 16.23	23 25.87	22 58 18.26	Flora, 53.
944	A. Z., 247, 55	9	- - -	- - - -	- - -	23 1 3.92	Flora, 53.
945	Weisse XX, 664	9	- - -	- - - -	26 56.11	14 55 6.29	Eunomia, 51.
946	A. Z., 237, 32	7	- - -	21 56 37.48	30 12.43	21 54 35.16	Flora, 53.
947	B. A C., 7134	5	- - -	18 39 46.39	- - -	18 37 41.59	Melpomene, 52.
948	Weisse XX, 860	9	- - -	14 26 2.77	- - -	14 23 56.54	Eunomia, 51.
949	B. A C., 7159	7	- - -	18 38 32.50	- - -	18 36 26.44	Melpomene, 52.
950	A. Z., 237, 12	9	- - -	- - - -	36 43.84	- - - -	Flora, 53.
951	Weisse XX, 1031	8	- - -	14 5 25.48	- - -	14 3 17.15	Eunomia, 51.
952	B. A. C., 7209	6.5	- - -	18 35 7.21	- - -	- - - -	Melpomene, 52.
953	A. Z., 249, 89	8	- - -	- - - -	43 13.70	- - - -	Urania, 54.
954	B. A. C., 7249	6	- - -	18 29 17.66	- - -	18 27 2.81	Melpomene, 52.
955	A Z, 249, 97	5	- - -	- - - -	49 50.02	- - - -	Urania, 54.
956	B. A. C., 7282	6	- - -	18 6 43.91	- - -	18 4 25.99	Melpomene, 52.
957	Weisse XX, 1394	7	- - -	- - - -	54 45.39	12 59 37.96	Eunomia, 52.
958	B. A. C, 7322	5.5	- - -	—17 49 31.49	- - -	—17 47 13.01	Melpomene, 52.

XXI hours.

Number.	STAR.	Magnitude.	1850. α	1850. δ	1860. α	1860. δ	ASTEROIDS AND COMETS—COMPARED.
959	G. 12 Y., 888	4.5	- - -	—11 58 32.09	1 57.85	—11 56 9.72	Eunomia, 52.
960	Weisse XXI, 346	8.5	- - -	11 13 33.65	- - -	11 11 1.48	Eunomia, 52.
961	A. C., 21404	8.5	- - -	- - - -	20 9.27	- - - -	Irene, 60.
962	A. C., 21492	9	- - -	- - - -	27 54.79	- - - -	Irene, 60.
963	(* 39) W.	- -	- - -	16 30 39.30	- - -	16 28 5.40	Melpomene, 52.
964	Rumker, 9349	7	- - -	15 31 14.87	- - -	15 28 33.30	Melpomene, 53.
965	Σ Cat. Gen., 2611	6.4	- - -	- - - -	30 22.24	- - - -	Eunomia, 60.
966	B A C., 7556	6	- - -	15 26 0.34	- - -	15 23 20.28	Melpomene, 53.
967	Weisse XXI, 916	9	- - -	- - - -	38 11.21	- - - -	Eunomia, 60.
968	Weisse XXI, 1071	8	- - -	14 53 34.30	- - -	14 50 47.20	Melpomene, 53.
969	Lalande, 42700	7	47 15.48	21 50 46.61	- - -	- - - -	Metis, 49.
970	Anonymous	9	48 12.16	21 28 27.13	- - -	- - - -	Metis, 49.
971	Anonymous	8.5	49 56.71	—21 26 55.59	- - -	- - - -	Metis, 49.
972	A. Z., 234, 93	8	- - -	- - - -	- - -	—23 32 23.60	Hebe, 55.
973	A. Z, 237, 101	9	- - -	- - - -	- - -	21 18 8.10	Hebe, 55.
974	A. Z., 237, 102	9	- - -	- - - -	- - -	21 0 47.18	Hebe, 55.
975	B. A. C., 7649	6	- - -	21 53 44.92	- - -	- - - -	Metis, 49.
976	Anonymous	9	50 58.90	20 43 6.94	- - -	- - - -	Metis, 49.
977	Lalande, 42813	9	- - -	20 19 14.88	- - -	- - - -	Metis, 49.
978	Anonymous	9	52 45.70	20 30 24.56	- - -	- - - -	Metis, 49.
979	Anonymous	-	56 37.07	19 48 0.46	- - -	- - - -	Metis, 49.
980	A. Z., 255, 70	9	- - -	- - - -	- - -	20 47 4.70	Hebe, 55.
981	A. Z., 255, 72	7.8	- - -	19 23 42.08	58 5.84	19 20 49.67	Hebe, 55. Metis, 49.
982	Weisse XXI, 1333	9	- - -	10 37 21.82	58 7.48	- - - -	Fortuna, 52.
983	A. Z., 255, 73	9	- - -	- - - -	- - -	—19 36 36.72	Hebe, 55.
984	Weisse XXI, 1375	9	- - -	9 54 41.81	- - -	- - - -	Fortuna, 52.
985	Lalande, 43106	8	59 29.99	—22 19 19.39	- - -	- - - -	Metis, 49.

XXII hours.

Number.	STAR.	Magnitude.	1850. α	1850. δ	1860. α	1860. δ	ASTEROIDS AND COMETS—COMPARED.
986	Weisse XXI, 1384	7.5	- - -	—10 48 28.12	0 19.40	—10 45 35.02	Fortuna, 52.
987	Weisse XXII, 13	8	- - -	9 32 1.47	2 5.86	— 9 29 6.64	Fortuna, 52.
988	B. A. C., 7724	7	- - -	—21 58 1.17	- - -	- - - -	Metis, 49.

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XXII hours—Continued.

Number.	STAR.	Magnitude.	1850. α	1850. δ	1860. α	1860. δ	ASTEROIDS AND COMETS—COMPARED.
			m. s.	° ′ ″	m. s.	° ′ ″	
989	Lalande, 43288	9	- - -	—18 45 55.24	- - -	- - - -	Metis, 49.
990	A. Z., 257, 16	7	- - -	- - - -	- - -	—24 41 49.87	Irene, 56.
991	B. A. C., 7771	6	- - -	13 34 38.31	9 18.04	13 31 40.13	Melpomene, 53.
992	A. Z., 257, 23	8.9	- - -	- - - -	- - -	24 30 9.35	Irene, 56.
993	A. Z., 257, 28	8	- - -	- - - -	- - -	24 4 30.44	Irene, 56.
994	A. Z., 257, 30	9	- - -	- - - -	- - -	23 38 4.77	Irene, 56.
995	Anonymous	9	20 37.00	16 25 47.82	- - -	- - - -	Metis, 49.
996	Weisse XXII, 467	8	- - -	9 11 2.88	22 34.60	9 7 58.03	Fortuna, 52.
997	B. A. C., 7836	6	- - -	15 21 2.46	- - -	- - - -	Metis, 49.
998	Anonymous	9	22 55.18	15 19 59.77	- - -	- - - -	Metis, 49.
999	A. Z., 257, 37	9	- - -	- - - -	- - -	23 23 23.62	Irene, 56.
1000	Weisse XXII, 644	8	- - -	14 50 42.67	- - -	- - - -	Metis, 49.
1001	Weisse XXII, 640	9	- - -	14 50 8.27	- - -	- - - -	Metis, 49.
1002	Weisse XXII, 641	6	- - -	8 40 31.19	31 1.45	- - - -	Fortuna, 52.
1003	Weisse XXII, 675	8.5	- - -	8 22 59.58	32 10.57	8 19 53.18	Fortuna, 52.
1004	Weisse XXII, 761	8	- - -	7 59 57.38	35 53.82	7 56 49.06	Fortuna, 52.
1005	Weisse XXII, 815	9	- - -	14 18 48.97	- - -	- - - -	Metis, 49.
1006	B. A. C., 7954	5	- - -	14 22 58.48	- - -	- - - -	Metis, 49.
1007	Weisse XXII, 900	8.5	- - -	7 42 8.57	43 13.99	7 39 0.25	Fortuna, 52.
1008	Weisse XXII, 962	8.5	- - -	6 54 18.33	46 21.22	- - - -	Fortuna, 52.
1009	B. A. C., 7976	7	- - -	12 59 7.68	46 48.86	- - - -	Metis, 49.
1010	Lalande, 44823	7	- - -	20 56 14.55	- - -	20 53 3.50	Irene, 52.
1011	Lalande, 44877	7.5	- - -	21 4 32.47	- - -	- - - -	Irene, 52.
1012	Weisse XXII, 1049	8	- - -	6 29 13.56	50 52.99	- - - -	Fortuna, 52.
1013	Weisse XXII, 1057	8	- - -	6 28 31.09	51 19.88	6 25 19.29	Fortuna, 52.
1014	(* 41) W.	-	- - -	21 0 53.59	- - -	—20 57 41.84	Irene, 52.
1015	Weisse XXII, 1140	8.2	- - -	12 7 0.22	- - -	- - - -	Metis, 49.
1016	Weisse XXII, 1156	8	- - -	12 4 13.71	- - -	- - - -	Metis, 49.
1017	Weisse XXII, 1232	8	- - -	—11 14 45.43	- - -	- - - -	Metis, 49.

XXIII hours.

1018	Weisse XXII, 1272	9	- - -	— 5 35 12.92	0 40.36	- - - -	Fortuna, 52.
1019	Weisse XXII, 1283	9	- - -	5 35 24.86	1 24.84	- - - -	Fortuna, 52.
1020	Weisse XXIII, 9	9	- - -	13 25 51.66	2 6.72	- - - -	Thetis, 53.
1021	Weisse XXIII, 14	9	- - -	—12 53 56.38	- - -	- - - -	Thetis, 53.
1022	Weisse XXIII, 48	7.5	- - -	+ 4 11 27.30	4 7.14	- - - -	Encke's Comet, 52.
1023	Weisse XXIII, 85	9	- - -	—10 44 44.63	- - -	- - - -	Metis, 49.
1024	Weisse XXIII, 111	8	- - -	+ 4 10 54.89	- - -	+ 4 14 11.79	Encke's Comet, 52.
1025	Weisse XXIII, 143	9	- - -	—11 51 38.22	8 27.98	- - - -	Thetis, 53.
1026	B. A. C., 8109	5	10 6.27	10 0 1.74	- - -	- - - -	Metis, 50.
1027	Weisse XXIII, 177	9	- - -	- - - -	- - -	3 41 54.49	Atalanta, 55.
1028	Weisse XXIII, 183	9	- - -	- - - -	- - -	3 41 14.87	Atalanta, 55.
1029	Weisse XXIII, 185	7	- - -	12 31 52.77	10 21.42	- - - -	Thetis, 53.
1030	B. A. C., 8127	6	- - -	4 33 48.17	13 12.64	+ 4 37 4.63	Encke's Comet, 52. Atalanta, 55.
1031	Lalande, 45704	8	- - -	- - - -	13 34.24	- - - -	Irene, 52.
1032	Weisse XXIII, 309	8	- - -	11 35 49.00	15 43.75	—11 32 29.15	Thetis, 53.
1033	Lalande, 45804	8	- - -	—18 36 43.01	16 31.64	—18 33 25.92	Irene, 52.
1034	Weisse XXIII, 359	9	- - -	+ 5 13 2.99	18 14.00	- - - -	Encke's Comet, 52.
1035	Lalande, 45838	9	- - -	—18 55 8.10	- - -	- - - -	Irene, 52.
1036	Weisse XXIII, 377	8.5	- - -	—10 51 30.05	19 20.20	- - - -	Thetis, 53.
1037	Santini, 1633	8.5	- - -	+ 5 15 0.82	21 8.60	+ 5 18 18.92	Encke's Comet, 52.
1038	Weisse XXIII, 423	8	- - -	—10 55 35.00	21 36.72	- - - -	Thetis, 53.
1039	Santini, 1635	8.5	- - -	+ 5 16 38.54	- - -	- - - -	Encke's Comet, 52.
1040	Weisse XXIII, 458	9	22 44.02	5 35 58.58	23 14.56	+ 5 39 16.53	Victoria, 50. Encke's Comet, 52.
1041	Weisse XXIII, 463	9	- - -	- - - -	23 36.20	—10 55 38.55	Thetis, 53.
1042	Santini, 1626	7.5	24 35.12	6 15 34.94	- - -	- - - -	Victoria, 50.
1043	Anonymous	9.5	25 0.74	6 41 13.66	- - -	- - - -	Victoria, 50.
1044	Anonymous	9.5	25 32.76	6 1 37.97	- - -	- - - -	Victoria, 50.
1045	Weisse XXIII, 534	9	- - -	+ 5 8 11.30	- - -	- - - -	Victoria, 50.
1046	Weisse XXIII, 592	9	- - -	— 7 56 44.11	- - -	- - - -	Metis, 50.

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XXIII hours—Continued.

Number.	STAR.	Magnitude.	1850. α	1850. δ	1860. α	1860. δ	ASTEROIDS AND COMETS—COMPARED.
			m. s.	° ′ ″	m. s.	° ′ ″	
1047	Weisse XXIII, 602	9	29 9.87	+ 5 5 14.70	- - -	- - - -	Victoria, 50.
1048	B. A. C., 8233	4.5	32 14.40	4 48 49.87	- - -	- - - -	Victoria, 50.
1049	Weisse XXIII, 678	9	- - -	- - - -	- - -	— 2 8 9.31	Aglaia, 57.
1050	Weisse XXIII, 685	8	- - -	- - - -	33 34.46	+ 7 9 51.64	Iris, 51.
1051	Weisse XXIII, 705	9	- - -	- - - -	34 33.35	+ 7 25 40.99	Iris, 51.
1052	Santini, 1649	6.5	- - -	6 25 14.05	34 48.79	- - - -	Encke's Comet, 52.
1053	Weisse XXIII, 710	6	- - -	- - - -	- - -	6 28 32.76	Iris, 51.
1054	Weisse XXIII, 749	9	- - -	- - - -	36 59.04	- - - -	Iris, 51.
1055	Weisse XXIII, 764	8	- - -	- - - -	37 40.31	6 24 54.59	Iris, 51.
1056	Weisse XXIII, 803	9	39 21.76	+ 4 25 2.92	- - -	- - - -	Victoria, 50.
1057	Weisse XXIII, 817	7	- - -	— 1 35 40.56	40 31.58	- - - -	Massilia, 52.
1058	Weisse XXIII, 828	9	- - -	- - - -	40 58.66	9 22 11.82	Iris, 51.
1059	Weisse XXIII, 829	9	- - -	- - - -	- - -	+ 9 22 13.40	Iris, 51.
1060	Weisse XXIII, 830	8	- - -	— 1 36 27.64	41 1.63	— 1 33 7.32	Massilia, 52.
1061	Weisse XXIII, 831	7	- - -	- - - -	41 5.85	+ 6 23 11.79	Iris, 51.
1062	B. A. C., 8272	7	- - -	+ 7 24 47.51	- - -	- - - -	Encke's Comet, 52.
1063	Weisse XXIII, 870	9	- - -	- - - -	42 59.11	6 16 9.26	Iris, 51.
1064	(☿ 26) W.	10	- - -	- - - -	43 19.92	7 20 22.84	Encke's Comet, 52.
1065	B. A. C., 8300	6	- - -	- - - -	45 28.76	+10 10 6.01	Iris, 51.
1066	Weisse XXIII, 916	9	- - -	- - - -	45 32.34	— 1 35 12.94	Massilia, 52.
1067	Weisse XXIII, 934	9	45 32.19	+ 4 19 24.46	- - -	- - - -	Victoria, 50.
1068	Weisse XXIII, 932	9	- - -	- - - -	46 58.72	+ 5 55 12.79	Iris, 51.
1069	(☿ 59) W.	-	- - -	— 1 6 53.74	- - -	— 1 3 33.69	Massilia, 52.
1070	Santini, 1664	7	- - -	+ 7 23 19.51	48 28.14	+ 7 26 42.44	Encke's Comet, 52.
1071	Rumker, 11766	9	- - -	3 47 33.89	49 7.55	3 50 55.06	Hygea, 51.
1072	Rumker, 11777	7	- - -	3 53 23.81	49 37.04	3 56 44.28	Hygea. 51.
1073	Weisse XXIII, 1030	7	- - -	- - - -	50 36.65	10 41 42.96	Iris, 51.
1074	Weisse XXIII, 1032	9	50 7.20	4 34 11.81	50 37.89	+ 4 37 32.47	Hygea, 51.
1075	Weisse XXIII, 1045	9	50 41.92	4 48 53.33	- - -	- - - -	Victoria, 50.
1076	Weisse XXIII, 1039	9	- - -	- - - -	50 54.56	— 0 54 24.47	Massilia, 52.
1077	B. A. C., 8331	4	- - -	- - - -	52 7.47	+ 6 5 17.00	Iris, 51.
1078	Weisse XXIII, 1075	9	- - -	- - - -	- - -	0 18 35.17	Fides, 55.
1079	Weisse XXIII, 1090	9	- - -	- - - -	- - -	0 17 10.67	Fides, 55.
1080	Weisse XXIII, 1110	9	- - -	4 13 11.68	54 25.70	- - - -	Hygea, 51.
1081	Santini, 1671	7	- - -	8 10 39.11	- - -	- - - -	Encke's Comet, 52.
1082	Rumker, 11913	8	- - -	5 11 59.25	55 35.17	5 15 21.15	Hygea, 51.
1083	Rumker, 11941	8	- - -	5 41 21.53	57 31.40	- - - -	Hygea, 51.
1084	Weisse XXIII, 1179	8	- - -	- - - -	57 36.23	0 45 29.92	Fides, 55.
1085	Weisse XXIII, 1180	9	- - -	+ 5 34 55.33	- - -	- - - -	Hygea, 51.
1086	Weisse XXIII, 1208	8	- - -	—11 36 49.14	- - -	- - - -	Flora, 50.
1087	Weisse XXIII, 1201	8	- - -	- - - -	59 20.87	12 5 42.34	Iris, 51.
1088	Weisse XXIII, 1212	9	- - -	- - - -	59 41.09	12 3 5.50	Iris, 51.
1089	Weisse XXIII, 1218	8	- - -	- - - -	- - -	+ 1 4 53.13	Fides, 55.

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CONSTANTS FOR THE REDUCTION OF FIXED STARS.

These constants are prepared from the Log's A, B, C, and D, of the American Ephemeris and Nautical Almanac for the year 1861. The epoch to which the observations are reduced by them is 1860.0. The instant, 1860.0, is assumed to be January 0*d*.414; mean time, Washington, the moment when the Sun's mean longitude was 280°. The notation and form of publication is similar to that published in volume III of the Washington Observations, and the auxiliary tables used in the reductions are similar to those of that volume.

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EPOCH MEAN MIDNIGHT, WASHINGTON.

Date.	Sid. T.	G.		H.		log. g.		log. h.		log. i.		$f+\Delta_{☽} f$.		T.	p.	☽	☽ — Γ^1.
1861.	h.	h. m. s.		h. m. s.								s.		y.		°	°
Jan. 1	6.79	11 32 30	5	11 16 21	226	1.42815	120	1.3091	2	0.2238	352	— 4.081	7	— 1.004	.0007	167	341
2	6.85	11 32 35	4	11 12 35	227	1.42935	119	1.3089	3	0.2590	325	4.088	5	1.007	.0007	181	354
3	6.92	11 32 39	3	11 8 48	226	1.43054	119	1.3086	3	0.2915	300	4.093	7	1.010	.0007	195	7
4	6.98	11 32 42	3	11 5 2	227	1.43173	119	1.3083	3	0.3215	284	4.100	11	1.012	.0007	210	20
5	7.05	11 32 45	3	11 1 15	228	1.43292	117	1.3080	3	0.3495	262	4.111	14	1.015	.0007	229	33
6	7.12	11 32 48	3	10 57 27	227	1.43409	116	1.3076	3	0.3757	245	4.125	15	1.017	.0007	238	46
7	7.18	11 32 51	2	10 53 40	228	1.43525	116	1.3073	4	0.4002	231	4.140	17	1.020	.0007	252	59
8	7.25	11 32 53	2	10 49 52	229	1.43641	116	1.3069	4	0.4233	218	4.157	17	1.022	.0007	265	72
9	7.31	11 32 55	2	10 46 3	229	1.43757	115	1.3065	4	0.4451	207	4.174	15	1.025	.0007	279	85
10	7.38	11 32 57	1	10 42 14	229	1.43872	113	1.3061	4	0.4658	196	4.189	15	1.028	.0007	292	98
11	7.44	11 32 58	1	10 38 25	230	1.43985	112	1.3057	5	0.4854	185	4.204	10	1.031	.0008	305	111
12	7.51	11 32 59	1	10 34 35	230	1.44097	111	1.3052	4	0.5039	177	4.214	10	1.034	.0008	318	124
13	7.57	11 33 00	1	10 30 45	231	1.44208	110	1.3048	5	0.5216	169	4.224	6	1.036	.0008	330	137
14	7.64	11 33 1	0	10 26 54	231	1.44318	110	1.3043	5	0.5385	161	4.230	5	1.039	.0008	342	150
15	7.70	11 33 1	0	10 23 3	231	1.44428	109	1.3038	5	0.5546	154	4.235	5	1.042	.0008	354	163
16	7.77	11 33 1	0	10 19 12	232	1.44537	108	1.3033	5	0.5700	147	4.240	5	1.044	.0008	6	177
17	7.83	11 33 1	0	10 15 20	233	1.44645	106	1.3028	6	0.5847	141	4.245	5	1.047	.0008	18	190
18	7.90	11 33 1	0	10 11 27	233	1.44751	106	1.3022	5	0.5988	135	4.250	9	1.050	.0008	30	203
19	7.96	11 33 0	1	10 7 34	234	1.44857	104	1.3017	6	0.6123	130	4.259	9	1.052	.0008	42	216
20	8.03	11 32 59	1	10 3 40	234	1.44961	103	1.3011	5	0.6253	124	4.268	11	1.055	.0008	54	229
21	8.10	11 32 58	1	9 59 46	235	1.45064	103	1.3006	6	0.6377	120	4.279	15	1.058	.0008	67	242
22	8.16	11 32 57	1	9 55 51	235	1.45167	101	1.3000	6	0.6497	115	4.294	15	1.061	.0008	79	255
23	8.23	11 32 56	2	9 51 56	236	1.45268	100	1.2994	6	0.6612	111	4.309	16	1.063	.0008	92	268
24	8.29	11 32 54	1	9 48 0	236	1.45368	100	1.2988	6	0.6723	107	4.325	15	1.066	.0008	106	281
25	8.36	11 32 53	2	9 44 4	237	1.45468	98	1.2982	7	0.6830	103	4.340	12	1.069	.0008	120	294
26	8.43	11 32 51	2	9 40 7	238	1.45566	97	1.2975	6	0.6933	99	4.352	10	1.072	.0008	134	307
27	8.49	11 32 49	2	9 36 9	238	1.45663	95	1.2969	6	0.7032	96	4.362	5	1.675	.0008	148	320
28	8.56	11 32 47	2	9 32 11	239	1.45758	94	1.2963	7	0.7128	92	4.367	5	1.078	.0008	163	333
29	8.62	11 32 45	2	9 28 12	240	1.45852	93	1.2956	6	0.7220	88	4.372	4	1.080	.0008	177	346
30	8.69	11 32 43	2	9 24 12	240	1.45945	93	1.2950	7	0.7308	86	4.376	5	1.083	.0008	192	359
31	8.76	11 32 41	2	9 20 12	241	1.46038	91	1.2943	6	0.7394	83	4.381	8	1.086	.0009	206	13
Feb. 1	8.82	11 32 39	2	9 16 11	242	1.46129	90	1.2937	7	0.7477	80	4.389	10	1.089	.0009	221	26
2	8.89	11 32 37	2	9 12 9	242	1.46219	89	1.2930	6	0.7557	77	4.399	12	1.092	.0009	235	39
3	8.95	11 32 35	3	9 8 7	243	1.46308	88	1.2924	7	0.7634	79	4.411	16	1.094	.0009	248	52
4	9.02	11 32 32	2	9 4 4	244	1.46396	85	1.2917	7	0.7708	72	4.426	15	1.097	.0009	262	65
5	9.09	11 32 30	2	9 0 00	245	1.46481	85	1.2910	6	0.7780	69	4.441	14	1.100	.0009	275	78
6	9.15	11 32 28	2	8 55 55	245	1.46566	86	1.2904	7	0.7849	67	4.455	13	1.103	.0009	288	91
7	9.22	11 32 26	3	8 51 50	245	1.46652	83	1.2897	6	0.7916	64	4.468	9	1.106	.0009	301	104
8	9.28	11 32 23	2	8 47 45	246	1.46735	82	1.2891	7	0.7980	62	4.477	7	1.108	.0009	314	117
9	9.35	11 32 21	2	8 43 39	247	1.46817	80	1.2884	7	0.8042	60	4.484	3	1.111	.0009	326	130
10	9.42	11 32 19	2	8 39 32	248	1.46897	80	1.2877	6	0.8102	58	4.487	4	1.113	.0009	338	143
11	9.48	11 32 17	2	8 35 24	248	1.46977	79	1.2871	6	0.8160	55	4.491	3	1.116	.0009	350	156
12	9.56	11 32 15	2	8 31 16	249	1.47056	77	1.2865	7	0.8215	54	4.494	2	1.118	.0009	2	169
13	9.61	11 32 13	2	8 27 7	249	1.47133	76	1.2858	6	0.8269	51	4.496	2	1.121	.0009	14	182
14	9.68	11 32 11	2	8 22 58	251	1.47209	75	1.2852	6	0.8320	50	4.498	5	1.124	.0009	26	195
15	9.74	11 32 9	1	8 18 47	250	1.47284	75	1.2846	7	0.8370	47	4.503	7	1.127	.0009	38	209
16	9.81	11 32 8	2	8 14 37	252	1.47359	74	1.2839	6	0.8417	46	4.510	8	1.130	.0009	50	222
17	9.87	11 32 6	1	8 10 25	252	1.47433	73	1.2833	5	0.8463	44	4.518	12	1.132	.0009	62	235
18	9.94	11 32 5	2	8 6 13	252	1.47506	71	1.2828	6	0.8507	42	4.530	11	1.135	.0009	74	248
19	10.00	11 32 3	1	8 2 1	253	1.47577	70	1.2822	6	0.8549	41	4.541	13	1.138	.0009	87	261
20	10.07	11 32 2	1	7 57 48	253	1.47647	70	1.2816	6	0.8590	38	4.554	13	1.141	.0010	100	274
21	10.13	11 32 1	0	7 53 35	254	1.47717	69	1.2810	5	0.8628	37	4.567	10	1.144	.0010	114	287
22	10.20	11 32 1	1	7 49 21	254	1.47786	67	1.2805	5	0.8665	35	4.577	8	1.146	.0010	127	300
23	10.26	11 31 00		7 45 7	255	1.47853	66	1.2800	5	0.8700	34	4.585	4	1.149	.0010	142	313
24	10.33	11 32 00	1	7 40 52	256	1.47919	66	1.2795	5	0.8734	32	4.589	3	1.152	.0010	157	326
25	10.40	11 31 59	0	7 36 36	256	1.47985	65	1.2790	5	0.8766	31	4.592	2	1.154	.0010	172	339
26	10.46	11 31 59	0	7 32 20	256	1.48050	65	1.2785	5	0.8797	28	4.594	2	1.157	.0010	187	352
27	10.53	11 31 59	1	7 28 4	257	1.48115	65	1.2780	4	0.8825	28	4.596	4	1.159	.0010	202	5
28	10.59	11 32 0	0	7 23 47	257	1.48178	63	1.2776	5	0.8853	26	4.600	7	1.162	.0010	216	18
29	10.66	11 32 0		7 19 30	257	1.48241	63	1.2771	4	0.8879	25	— 4.607	10	— 1.165	.0010	231	32

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EPOCH MEAN MIDNIGHT, WASHINGTON.

Date.	Sid. T.	G.		H.		log. g.		log. h.		log. i.		$f+\Delta_{☽} f$.		T.	p.	☽	☽ — r¹.
1861.	h.	h. m s.		h. m. s.								s.		y.		°	°
Mar. 1	10.67	11 32 1	0	7 19 30	257	1.48241	63	1.2771	4	0.8879	24	— 4.607	10	— 1.165	.0010	231	32
2	10.73	11 32 1	1	7 15 13	258	1.48304	62	1.2767	4	0.8903	23	4.617	13	1.168	.0010	245	45
3	10.80	11 32 2	1	7 10 55	258	1.48366	61	1.2763	3	0.8926	21	4.630	12	1.171	.0010	259	58
4	10.86	11 32 3	2	7 6 37	259	1.48427	59	1.2760	4	0.8947	21	4.642	12	1.173	.0010	272	71
5	10.93	11 32 5	2	7 2 18	259	1.48486	60	1.2756	3	0.8968	19	4.654	10	1.176	.0010	285	84
6	10.99	11 32 7	2	6 57 57	259	1.48546	69	1.2753	3	0.8987	17	4.664	9	1.179	.0010	298	97
7	11.06	11 32 9	2	6 53 40	259	1.48605	58	1.2750	3	0.9004	16	4.673	5	1.182	.0010	310	110
8	11.12	11 32 11	3	6 49 21	260	1.48663	58	1.2747	3	0.9020	14	4.678	4	1.185	.0010	323	123
9	11.19	11 32 14	2	6 45 1	259	1.48721	57	1.2744	2	0.9034	13	4.682	2	1.187	.0010	335	136
10	11.25	11 32 16	3	6 40 42	260	1.48778	57	1.2742	2	0.9057	12	4.684	0	1.190	.0010	347	149
11	11.32	11 32 19	4	6 36 22	260	1.48835	56	1.2740	2	0.9059	11	4.684	0	1.193	.0010	359	162
12	11.39	11 32 23	3	6 32 2	260	1.48891	56	1.2738	2	0.9070	9	4.684	0	1.196	.0010	11	175
13	11.45	11 32 26	4	6 27 42	260	1.48947	55	1.2736	1	0.9079	7	4.684	2	1.199	.0010	23	188
14	11.52	11 32 30	4	6 23 22	260	1.49002	55	1.2735	1	0.9086	7	4.686	6	1.201	.0010	35	201
15	11.58	11 32 34	5	6 19 2	260	1.49057	55	1.2734	1	0.9093	5	4.692	6	1.204	.0010	47	214
16	11.65	11 32 39	4	6 14 42	260	1.49112	54	1.2733	1	0.9098	4	4.698	9	1.206	.0011	59	227
17	11.72	11 32 43	5	6 10 22	260	1.49166	54	1.2732	1	0.9102	2	4.707	11	1.209	.0011	71	240
18	11.78	11 32 48	6	6 6 2	259	1.49220	54	1.2731	0	0.9104	1	4.718	11	1.212	.0011	83	253
19	11.85	11 32 54	5	6 1 43	260	1.49274	54	1.2731	0	0.9105	0	4.729	11	1.214	.0011	95	266
20	11.91	11 32 59	6	5 57 23	259	1.49328	54	1.2731	0	0.9105	1	4.740	10	1.217	.0011	108	279
21	11.98	11 33 5	6	5 53 4	259	1.49382	54	1.2731	1	0.9101	3	4.750	4	1.220	.0011	122	293
22	12.04	11 33 11	6	5 48 45	259	1.49436	54	1.2732	1	0.9101	4	4.758	5	1.223	.0011	135	306
23	12.11	11 33 17	7	5 44 26	259	1.49490	53	1.2733	1	0.9097	5	4.763	2	1.225	.0011	150	319
24	12.17	11 33 24	7	5 40 7	258	1.49543	53	1.2734	1	0.9092	7	4.765	1	1.228	.0011	165	332
25	12.24	11 33 31	7	5 35 49	258	1.49596	53	1.2735	1	0.9085	8	4.766	1	1.231	.0011	180	345
26	12.31	11 33 38	7	5 31 31	258	1.49649	53	1.2736	2	0.9077	9	4.767	2	1.234	.0011	195	358
27	12.37	11 33 45	8	5 27 13	257	1.49702	53	1.2738	2	0.9068	11	4.769	5	1.237	.0011	210	11
28	12.44	11 33 53	8	5 22 56	257	1.49755	54	1.2740	2	0.9057	11	4.774	8	1.240	.0011	225	24
29	12.50	11 34 1	8	5 18 39	256	1.49809	54	1.2742	3	0.9046	14	4.782	12	1.242	.0011	240	37
30	12.57	11 34 9	9	5 14 23	257	1.49863	54	1.2745	2	0.9032	14	4.794	14	1.245	.0011	255	50
31	12.64	11 34 18	8	5 10 6	255	1.49917	54	1.2747	3	0.9018	16	4.808	11	1.247	.0011	268	63
April 1	12.70	11 34 26	9	5 5 51	255	1.49971	54	1.2750	3	0.9002	17	4.819	11	1.250	.0011	282	76
2	12.77	11 34 35	9	5 1 36	255	1.50025	54	1.2753	3	0.8985	19	4.830	8	1.253	.0011	295	89
3	12.83	11 34 44	10	4 57 21	254	1.50079	54	1.2756	4	0.8966	19	4.838	7	1.256	.0011	307	102
4	12.90	11 34 54	9	4 53 7	254	1.50133	54	1.2760	3	0.8947	22	4.845	4	1.258	.0011	320	115
5	12.96	11 35 3	10	4 48 53	253	1.50187	54	1.2763	4	0.8925	22	4.849	1	1.261	.0012	332	129
6	13.03	11 35 13	10	4 44 40	252	1.50242	55	1.2767	4	0.8903	24	4.850	2	1.264	.0012	344	142
7	13.09	11 35 23	11	4 40 28	252	1.50297	56	1.2771	5	0.8879	26	4.852	1	1.267	.0012	356	155
8	13.16	11 35 34	10	4 36 16	251	1.50353	56	1.2776	4	0.8853	26	4.853	1	1.269	.0012	8	168
9	13.22	11 35 44	11	4 32 5	251	1.50409	57	1.2780	4	0.8827	29	4.854	3	1.272	.0012	20	181
10	13.29	11 35 55	11	4 27 54	250	1.50466	57	1.2784	5	0.8798	29	4.857	5	1.276	.0012	32	194
11	13.36	11 36 6	11	4 23 44	249	1.50523	57	1.2789	5	0.8769	32	4.862	6	1.278	.0012	44	207
12	13.43	11 36 17	11	4 19 35	249	1.50580	58	1.2794	5	0.8737	32	4.868	10	1.281	.0012	55	220
13	13.49	11 36 28	12	4 15 26	247	1.50638	58	1.2799	5	0.8705	34	4.878	11	1.283	.0012	67	233
14	13.56	11 36 40	11	4 11 19	247	1.50696	58	1.2804	5	0.8671	36	4.889	11	1.286	.0012	80	246
15	13.62	11 36 51	12	4 7 12	247	1.50754	59	1.2809	6	0.8635	37	4.900	13	1.288	.0012	92	259
16	13.69	11 37 3	12	4 3 5	245	1.50813	60	1.2815	5	0.8598	39	4.913	11	1.291	.0012	104	272
17	13.75	11 37 15	12	3 59 0	245	1.50873	61	1.2820	6	0.8559	40	4.924	9	1.294	.0012	117	285
18	13.82	11 37 27	12	3 54 55	244	1.50934	61	1.2826	6	0.8519	42	4.933	8	1.296	.0012	131	298
19	13.88	11 37 39	12	3 50 51	243	1.50995	62	1.2832	5	0.8477	44	4.941	5	1.299	.0012	144	311
20	13.95	11 37 51	13	3 46 48	242	1.51057	62	1.2837	6	0.8433	45	4.946	2	1.302	.0012	158	325
21	14.02	11 38 4	12	3 42 46	241	1.51119	62	1.2843	6	0.8388	47	4.948	2	1.304	.0012	173	338
22	14.08	11 38 16	13	3 38 45	241	1.51181	63	1.2849	6	0.8341	49	4.950	3	1.307	.0012	188	351
23	14.15	11 38 29	12	3 34 44	240	1.51244	63	1.2855	6	0.8292	51	4.953	6	1.310	.0012	203	4
24	14.21	11 38 41	13	3 30 44	239	1.51307	64	1.2861	7	0.8241	52	4.959	9	1.313	.0012	219	17
25	14.28	11 38 54	13	3 26 45	238	1.51371	65	1.2868	6	0.8189	55	4.968	13	1.316	.0012	234	30
26	14.34	11 39 7	13	3 22 47	238	1.51436	65	1.2874	6	0.8134	56	4.981	13	1.319	.0012	249	43
27	14.41	11 39 20	13	3 18 49	237	1.51501	66	1.2880	6	0.8078	58	4.994	15	1.322	.0012	263	56
28	14.47	11 39 33	12	3 14 52	236	1.51567	67	1.2886	7	0.8020	60	5.009	13	1.324	.0012	277	69
29	14.54	11 39 45	13	3 10 56	235	1.51634	68	1.2893	6	0.7960	63	5.022	12	1.327	.0012	291	82
30	14.61	11 39 58	13	3 7 1	234	1.51702	68	1.2899	6	0.7897	64	— 5.034	9	— 1.330	.0013	304	95

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Date.	Sid. T.	G.		H.		log. *g*.		log. *h*.		log. *i*.		$f+\Delta_{☽}f$		T.	*p*.	☽	☽ — r^1.
1861.	h.	h. m. s.		h. m. s.								s.		y.		°	°
May 1	14.67	11 40 11	13	3 3 7	234	1.51770	69	1.2905	7	0.7833	67	— 5.043	6	— 1.332	.0013	317	108
2	14.74	11 40 24	13	2 59 13	233	1.51839	69	1.2912	6	0.7766	69	5.049	5	1.335	.0013	329	121
3	14.80	11 40 37	13	2 55 20	232	1.51908	71	1.2918	6	0.7697	71	5.054	3	1.338	.0013	341	134
4	14.97	11 40 50	13	2 51 28	231	1.51979	71	1.2924	7	0.7626	74	5.057	2	1.341	.0013	353	147
5	14.93	11 41 3	13	2 47 37	230	1.52050	71	1.2931	6	0.7552	76	5.059	4	1.343	.0013	5	160
6	15.00	11 41 16	13	2 43 47	230	1.52121	72	1.2937	6	0.7476	79	5.063	3	1.346	.0013	17	174
7	15.06	11 41 29	13	2 39 57	229	1.52193	72	1.2943	6	0.7397	82	5.066	8	1.349	.0013	29	187
8	15.13	11 41 42	13	2 36 8	228	1.52265	73	1.2949	6	0.7315	84	5.074	8	1.352	.0013	41	200
9	15.19	11 41 55	12	2 32 20	228	1.52338	74	1.2956	6	0.7231	87	5.082	10	1.354	.0013	53	213
10	15.26	11 42 7	13	2 28 32	226	1.52412	74	1.2962	6	0.7144	90	5.092	13	1.357	.0013	65	226
11	15.33	11 42 20	12	2 24 46	227	1.52486	75	1.2968	6	0.7054	93	5.105	14	1.360	.0013	77	239
12	15.40	11 42 32	13	2 20 59	225	1.52561	76	1.2974	6	0.6961	97	5.119	14	1.363	.0013	89	252
13	15.46	11 42 45	12	2 17 14	224	1.52637	77	1.2980	6	0.6864	100	5.133	13	1.366	.0013	102	265
14	15.53	11 42 57	12	2 13 30	224	1.52714	77	1.2986	5	0.6764	103	5.146	13	1.369	.0013	114	278
15	15.59	11 43 9	13	2 9 46	223	1.52791	78	1.2991	6	0.6661	107	5.159	11	1.371	.0013	127	291
16	15.66	11 43 22	12	2 6 3	223	1.52869	78	1.2997	6	0.6554	112	5.170	7	1.374	.0014	140	304
17	15.72	11 43 34	11	2 2 20	222	1.52947	78	1.3003	5	0.6442	115	5.177	6	1.377	.0014	154	317
18	15.79	11 43 45	12	1 58 38	221	1.53025	80	1.3008	5	0.6327	120	5.183	6	1.379	.0014	168	330
19	15.85	11 43 57	12	1 54 57	220	1.53105	80	1.3013	6	0.6207	124	5.189	5	1.382	.0014	182	343
20	15.92	11 44 9	11	1 51 17	220	1.53185	81	1.3019	5	0.6083	129	5.194	6	1.385	.0014	197	356
21	15.98	11 44 20	11	1 47 37	219	1.53266	81	1.3024	5	0.5954	134	5.200	10	1.387	.0014	212	10
22	16.05	11 44 31	11	1 43 58	219	1.53347	81	1.3029	5	0.5820	140	5.210	12	1.390	.0014	227	23
23	16.11	11 44 42	11	1 40 19	218	1.53428	81	1.3034	4	0.5680	145	5.222	15	1.393	.0014	242	36
24	16.18	11 44 53	11	1 36 41	218	1.53509	81	1.3038	5	0.5535	152	5.237	16	1.395	.0014	257	49
25	16.24	11 45 4	11	1 33 3	217	1.53590	83	1.3043	4	0.5383	159	5.253	17	1.398	.0014	271	62
26	16.31	11 45 15	10	1 29 26	216	1.53673	84	1.3047	5	0.5224	166	5.270	15	1.401	.0014	285	75
27	16.37	11 45 25	10	1 25 50	217	1.53757	84	1.3052	4	0.5058	173	5.285	12	1.404	.0014	299	88
28	16.44	11 45 35	10	1 22 13	215	1.53841	84	1.3056	4	0.4885	182	5.297	10	1.406	.0014	312	101
29	16.51	11 45 45	10	1 18 38	215	1.53925	84	1.3060	4	0.4703	191	5.307	7	1.409	.0014	325	114
30	16.58	11 45 55	9	1 15 3	215	1.54009	84	1.3064	4	0.4512	201	5.314	6	1.412	.0014	337	127
31	16.64	11 46 4	10	1 11 28	215	1.54093	85	1.3068	3	0.4311	213	5.320	5	1.414	.0014	350	140
June 1	16.71	11 46 14	9	1 7 53	214	1.54178	85	1.3071	4	0.4098	224	5.325	4	1.417	.0014	2	153
2	16.77	11 46 23	9	1 4 19	213	1.54263	85	1.3075	3	0.3874	238	5.329	5	1.419	.0014	13	166
3	16.84	11 46 32	9	1 0 56	213	1.54348	85	1.3078	3	0.3636	253	5.334	8	1.422	.0014	25	179
4	16.90	11 46 40	9	0 57 13	213	1.54433	86	1.3081	3	0.3383	269	5.342	11	1.425	.0014	37	192
5	16.97	11 46 49	8	0 53 40	213	1.54519	86	1.3084	3	0.3114	289	5.353	11	1.428	.0014	49	206
6	17.04	11 46 57	8	0 50 7	212	1.54605	86	1.3087	2	0.2825	311	5.364	14	1.431	.0015	61	209
7	17.10	11 47 5	7	0 46 35	212	1.54691	86	1.3089	3	0.2514	336	5.378	15	1.433	.0015	73	232
8	17.17	11 47 12	8	0 43 3	212	1.54777	86	1.3092	2	0.2178	365	5.393	16	1.436	.0015	86	245
9	17.23	11 47 20	7	0 39 31	211	1.54863	87	1.3094	2	0.1813	400	5.409	16	1.439	.0015	98	258
10	17.30	11 47 27	7	0 36 0	212	1.54950	87	1.3096	2	0.1414	442	5.425	15	1.442	.0015	111	271
11	17.37	11 47 34	7	0 32 28	211	1.55037	87	1.3098	1	0.0971	493	5.440	11	1.445	.0015	124	284
12	17.43	11 47 41	6	0 28 57	210	1.55124	87	1.3099	2	0.0478	558	5.451	11	1.447	.0015	137	297
13	17.50	11 47 47	6	0 25 27	211	1.55211	87	1.3101	1	9.9920	641	5.462	6	1.450	.0015	151	310
14	17.59	11 47 53	6	0 21 56	210	1.55298	87	1.3102	1	9.9279	754	5.468	6	1.453	.0015	165	323
15	17.63	11 47 59	6	0 18 26	211	1.55385	87	1.3103	1	9.8525	914	5.474	7	1.455	.0015	179	336
16	17.70	11 48 5	5	0 14 55	210	1.55472	87	1.3104	1	9.7611		5.481	7	1.458	.0015	193	349
17	17.76	11 48 10	6	0 11 25	210	1.55559	87	1.3105	0	9.6451		5.488	10	1.461	.0015	207	2
18	17.83	11 48 16	5	0 7 55	210	1.55646	87	1.3105	1	9.4862		5.498	11	1.463	.0015	222	15
19	17.89	11 48 21	4	0 4 25	210	1.55733	86	1.3106	0	9.2328		5.509	16	1.466	.0016	236	28
20	17.96	11 48 25	5	0 0 25	210	1.55819	86	1.3106	0	8.5499		5.525	18	1.469	.0016	251	42
21	18.02	11 48 30	4	23 57 25	210	1.55905	86	1.3106	0	n 8.9998		5.543	19	1.472	.0016	265	55
22	18.08	11 48 34	4	23 53 55	210	1.55991	86	1.3106	1	9.3717		5.562	15	1.474	.0016	280	68
23	18.15	11 48 38	4	23 50 25	210	1.56077	86	1.3105	0	9.5690		5.577	15	1.477	.0016	293	81
24	18.21	11 48 42	3	23 46 55	210	1.56163	86	1.3105	1	9.7040		5.592	11	1.480	.0016	307	94
25	18.28	11 48 45	3	23 43 25	210	1.56249	85	1.3104	1	9.8068		5.603	9	1.483	.0016	320	107
26	18.35	11 48 48	3	23 39 55	210	1.56334	85	1.3103	2	9.8897	829	5.612	6	1.486	.0016	333	120
27	18.41	11 48 51	3	23 36 25	210	1.56419	85	1.3101	1	9.9593	696	5.618	4	1.488	.0016	345	133
28	18.48	11 48 54	3	23 32 55	211	1.56504	85	1.3100	1	0.0191	598	5.622	6	1.491	.0016	358	146
29	18.55	11 48 57	2	23 29 24	211	1.56589	84	1.3099	2	0.0715	524	5.628	6	1.494	.0016	10	159
30	18.62	11 48 59		23 25 53		1.56673		1.3097		n 0.1182	467	— 5.634		— 1.496	.0016	22	172

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1861.		h. m. s.		h. m. s.								s.		y.		°	°
July 1	18.68	11 49 1	2	23 22 23	212	1.56757	83	1.3095	2	*n* 0.1603	382	— 5.641	9	— 1.499	.0016	34	185
2	18.75	11 49 3	1	23 18 51	211	1.56840	83	1.3093	2	0.1985	350	5.650	12	1.502	.0016	45	198
3	18.81	11 49 4	2	23 15 20	211	1.56923	83	1.3091	3	0.2335	323	5.662	13	1.505	.0016	57	211
4	18.88	11 49 6	1	23 11 49	212	1.57006	82	1.3088	2	0.2658	300	5.675	15	1.507	.0016	70	224
5	18.94	11 49 7	1	23 18 17	212	1.57088	82	1.3086	3	0.2958	279	5.690	15	1.510	.0016	82	237
6	19.01	11 49 8	1	23 4 45	213	1.57170	82	1.3083	3	0.3237	261	5.705	15	1.513	.0017	95	251
7	19.07	11 49 9	1	23 1 12	212	1.57252	82	1.3080	3	0.3498	245	5.720	15	1.516	.0017	107	264
8	19.14	11 49 10	0	22 57 40	213	1.57334	80	1.3077	4	0.3743	231	5.735	12	1.519	.0017	121	277
9	19.20	11 49 10	4	22 54 7	214	1.57414	80	1.3073	3	0.3974	218	5.747	10	1.522	.0017	134	290
10	19.27	11 49 10	4	22 50 33	213	1.57494	79	1.3070	4	0.4192	207	5.757	8	1.524	.0017	148	303
11	19.34	11 49 10	4	22 47 0	214	1.57573	79	1.3066	4	0.4399	196	5.765	5	1.527	.0017	161	316
12	19.40	11 49 10	4	22 43 26	215	1.57652	78	1.3062	4	0.4595	186	5.770	6	1.530	.0017	175	329
13	19.47	11 49 10	1	22 39 51	215	1.57730	74	1.3058	4	0.4781	178	5.776	5	1.533	.0017	190	342
14	19.53	11 49 9	4	22 36 16	215	1.57808	77	1.3054	4	0.4959	169	5.781	9	1.535	.0017	204	355
15	19.60	11 49 9	1	22 32 41	216	1.57885	77	1.3050	4	0.5128	162	5.790	12	1.538	.0017	218	8
16	19.67	11 49 8	1	22 29 5	216	1.57962	76	1.3046	5	0.5290	155	5.802	13	1.540	.0017	232	21
17	19.73	11 49 7	1	22 25 29	217	1.58038	75	1.3041	5	0.5445	148	5.815	16	1.543	.0017	246	34
18	19.80	11 49 6	1	22 21 52	217	1.58113	75	1.3036	4	0.5593	143	5.831	17	1.545	.0017	261	47
19	19.86	11 49 5	2	22 18 15	218	1.58188	74	1.3032	5	0.5736	137	5.848	15	1.548	.0017	275	60
20	19.93	11 49 3	1	22 14 37	218	1.58262	73	1.5027	5	0.5873	131	5.863	14	1.551	.0017	288	73
21	19.00	11 49 2	1	22 10 59	218	1.58335	73	1.3022	5	0.6004	126	5.877	11	1.554	.0017	302	87
22	20.06	11 49 0	1	22 7 21	220	1.58408	73	1.3017	6	0.6130	122	5.888	9	1.557	.0017	315	100
23	20.13	11 48 59	2	22 3 41	220	1.58481	72	1.3011	5	0.6252	117	5.897	5	1.559	.0017	328	113
24	20.19	11 48 57	2	22 0 1	220	1.58553	70	1.3006	6	0.6369	113	5.902	5	1.562	.0017	341	126
25	20.25	11 48 55	2	21 56 21	222	1.58623	70	1.3000	5	0.6482	109	5.907	3	1.565	.0017	353	139
26	20.32	11 48 53	2	21 52 39	221	1.58693	69	1.2995	6	0.6591	106	5.910	4	1.568	.0018	6	152
27	20.39	11 48 51	2	21 48 58	223	1.58762	68	1.2989	5	0.6697	101	5.914	4	1.571	.0018	18	165
28	20.45	11 48 49	2	21 45 15	223	1.58830	68	1.2984	6	0.6798	98	5.918	8	1.574	.0018	30	178
29	20.52	11 48 47	3	21 41 32	223	1.58898	68	1.2978	6	0.6896	95	5.926	8	1.576	.0018	41	191
30	20.58	11 48 44	2	21 37 49	225	1.58966	68	1.2972	6	0.6991	91	5.934	11	1.579	.0018	53	204
31	20.65	11 48 42	2	21 34 4	225	1.59034	66	1.2966	6	0.7082	89	5.945	13	1.581	.0018	65	217
Aug. 1	20.72	11 48 40	3	21 30 19	226	1.59100	66	1.2960	6	0.7171	86	5.958	13	1.584	.0018	78	230
2	20.78	11 48 37	2	21 26 33	227	1.59166	64	1.2954	6	0.7257	82	5.971	14	1.586	.0018	90	243
3	20.85	11 48 35	3	21 22 46	227	1.59230	64	1.2948	7	0.7339	80	5.985	14	1.589	.0018	103	256
4	20.92	11 48 32	2	21 18 59	228	1.59294	64	1.2941	6	0.7419	78	5.999	10	1.592	.0018	116	269
5	20.98	11 48 30	3	21 15 11	229	1.59358	62	1.2935	6	0.7497	75	6.009	9	1.595	.0018	129	283
6	21.05	11 48 27	2	21 11 22	229	1.59420	62	1.2929	6	0.7572	72	6.018	6	1.598	.0018	143	296
7	21.11	11 48 25	3	21 7 33	230	1.59482	62	1.2923	7	0.7644	70	6.024	5	1.600	.0018	157	309
8	21.18	11 48 22	2	21 3 43	231	1.59544	60	1.2916	6	0.7714	68	6.029	2	1.603	.0018	172	322
9	21.24	11 48 20	3	20 59 52	232	1.59604	60	1.2910	6	0.7782	66	6.031	3	1.606	.0018	186	335
10	21.31	11 48 17	2	20 56 0	232	1.59664	59	1.2904	6	0.7848	63	6.034	5	1.609	.0019	200	348
11	21.38	11 48 15	3	20 52 8	233	1.59723	59	1.2898	7	0.7911	61	6.039	9	1.612	.0019	215	1
12	21.44	11 48 12	2	20 48 15	234	1.59782	57	1.2891	6	0.7972	60	6.048	11	1.614	.0019	229	14
13	21.51	11 48 10	3	20 44 21	235	1.59839	57	1.2885	6	0.8032	57	6.059	13	1.617	.0019	243	27
14	21.57	11 48 7	2	20 40 26	235	1.59896	56	1.2879	6	0.8089	55	6.072	14	1.620	.0019	257	40
15	21.64	11 48 5	2	20 36 31	237	1.59952	56	1.2873	6	0.8144	54	6.086	14	1.623	.0019	271	53
16	21.70	11 48 3	2	20 32 34	236	1.60008	55	1.2867	7	0.8198	51	6.100	12	1.626	.0019	284	66
17	21.77	11 48 1	3	20 28 38	238	1.60063	54	1.2860	6	0.8249	50	6.112	7	1.628	.0019	298	79
18	21.83	11 47 58	2	20 24 40	238	1.60117	54	1.2854	6	0.8299	48	6.121	8	1.631	.0019	311	92
19	21.90	11 47 56	2	20 20 42	239	1.60171	53	1.2848	5	0.8347	47	6.129	5	1.634	.0019	324	105
20	21.96	11 47 54	1	20 16 43	240	1.60224	52	1.2843	6	0.8394	44	6.134	2	1.636	.0019	337	119
21	22.03	11 47 53	2	20 12 43	241	1.60276	51	1.2837	6	0.8438	43	6.136	2	1.639	.0019	349	132
22	22.09	11 47 51	2	20 8 42	241	1.60327	51	1.2831	6	0.8481	42	6.138	1	1.642	.0019	2	145
23	22.16	11 47 49	2	20 4 41	242	1.60378	51	1.2825	5	0.8523	40	6.139	2	1.644	.0019	14	158
24	22.22	11 47 47	1	20 0 39	243	1.60429	50	1.2820	6	0.8563	38	6.141	4	1.647	.0020	26	171
25	22.29	11 47 46	1	19 56 36	244	1.60479	49	1.2814	5	0.8601	36	6.145	6	1.650	.0020	38	184
26	22.36	11 47 45	2	19 52 32	244	1.60528	49	1.2809	5	0.8637	35	6.151	8	1.653	.0020	49	197
27	22.42	11 47 43	2	19 48 28	245	1.60577	49	1.2804	5	0.8672	34	6.159	9	1.656	.0020	61	210
28	22.49	11 47 42	1	19 44 23	246	1.60626	48	1.2799	5	0.8706	32	6.168	11	1.658	.0020	73	223
29	22.55	11 47 41	0	19 40 17	246	1.60674	47	1.2794	5	0.8738	31	6.179	11	1.661	.0020	86	236
30	22.62	11 47 41	1	19 36 11	247	1.60721	47	1.2789	5	0.8769	30	6.190	12	— 1.664	.0020	98	249
31	22.69	11 47 40		19 32 4		1.60768		1.2784		*n* 0.8799		— 6.202		- -	.0020	111	262

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Date.	Sid. T.	G.		H.		log. g.		log. h.		log. i.		$f+\Delta_{☽} f$		T.	p.	☽	☽−☊¹
1861.	h.	h. m. s.		h. m. s.								s		y.		°	°
Sept. 1	22.76	11 47 39	0	19 27 56	258	1.60814	46	1.2780	4	n 0.8826	27	− 6.212	7	− 1.669	.0020	124	275
2	22.82	11 47 39	0	19 23 48	259	1.60860	45	1.2776	5	0.8853	25	6.219	5	1.672	.0020	138	288
3	22.89	11 47 39	0	19 19 39	249	1.60905	44	1.2771	4	0.8878	24	6.224	3	1.674	.0020	152	301
4	22.95	11 47 39	0	19 15 30	251	1.60949	44	1.2767	3	0.8902	22	6.227	1	1.677	.0020	166	314
5	23.02	11 47 39	0	19 11 19	250	1.60993	44	1.2764	4	0.8924	21	6.228	1	1.680	.0020	181	327
6	23.08	11 47 39	0	19 7 9	251	1.61037	44	1.2760	3	0.8945	20	6.229	3	1.683	.0020	196	341
7	23.15	11 47 39	1	19 2 58	252	1.61081	44	1.2757	4	0.8965	18	6.232	5	1.686	.0020	211	354
8	23.21	11 47 40	1	18 58 46	252	1.61125	43	1.2753	3	0.8983	17	6.237	8	1.689	.0020	225	7
9	23.28	11 47 41	1	18 54 34	253	1.61168	42	1.2750	2	0.9000	16	6.245	12	1.691	.0020	240	20
10	23.34	11 47 42	1	18 50 21	253	1.61210	42	1.2748	3	0.9016	15	6.257	12	1.694	.0020	254	33
11	23.41	11 47 43	1	18 46 8	254	1.61252	43	1.2745	2	0.9031	13	6.269	13	1.696	.0021	268	46
12	23.48	11 47 44	2	18 41 54	253	1.61295	42	1.2743	3	0.9044	12	6.282	10	1.699	.0021	281	59
13	23.54	11 47 46	2	18 37 41	254	1.61337	41	1.2740	2	0.9056	10	6.293	8	1.702	.0021	295	72
14	23.61	11 47 48	2	18 33 27	255	1.61378	41	1.2738	1	0.9066	10	6.301	6	1.704	.0021	308	85
15	23.67	11 47 50	2	18 29 12	255	1.61419	41	1.2737	2	0.9076	8	6.307	4	1.707	.0021	320	98
16	23.74	11 47 52	2	18 24 57	255	1.61460	41	1.2735	1	0.9084	7	6.311	1	1.710	.0021	333	111
17	23.81	11 47 54	3	18 20 42	255	1.61501	40	1.2734	1	0.9091	5	6.312	0	1.713	.0021	346	124
18	23.87	11 47 57	3	18 16 27	256	1.61541	40	1.2733	1	0.9096	4	6.312	1	1.716	.0021	358	137
19	23.94	11 48 0	3	18 12 11	256	1.61581	40	1.2732	0	0.9100	3	6.313	1	1.719	.0021	10	150
20	0.00	11 48 3	3	18 7 55	256	1.61621	41	1.2732	1	0.9103	2	6.314	2	1.722	.0021	22	163
21	0.07	11 48 6	3	18 3 39	257	1.61662	40	1.2731	0	0.9105	1	6.316	4	1.724	.0021	34	177
22	0.14	11 48 9	4	17 59 22	256	1.61702	40	1.2731	0	0.9106	1	6.320	6	1.727	.0021	46	190
23	0.20	11 48 13	4	17 55 6	256	1.61742	40	1.2731	1	0.9105	2	6.326	9	1.730	.0021	58	203
24	0.27	11 48 17	4	17 50 50	257	1.61782	40	1.2732	0	0.9103	4	6.335	9	1.732	.0021	70	216
25	0.33	11 48 21	4	17 46 33	257	1.61822	40	1.2732	1	0.9099	4	6.344	11	1.735	.0021	82	229
26	0.40	11 48 25	4	17 42 16	257	1.61862	40	1.2733	1	0.9095	6	6.355	11	1.737	.0022	94	242
27	0.46	11 48 29	5	17 37 59	256	1.61902	40	1.2734	2	0.9089	8	6.366	10	1.740	.0022	106	255
28	0.53	11 48 34	5	17 33 43	257	1.61942	40	1.2736	1	0.9081	8	6.376	7	1.742	.0022	119	268
29	0.59	11 48 39	5	17 29 26	257	1.61982	40	1.2737	2	0.9073	10	6.383	6	1.745	.0022	132	281
30	0.66	11 48 44	5	17 25 9	257	1.62022	40	1.2739	2	0.9063	11	6.389	3	1.748	.0022	146	294
Oct. 1	0.73	11 48 49	6	17 20 52	256	1.62063	40	1.2741	2	0.9052	13	6.392	0	1.751	.0022	160	307
2	0.79	11 48 55	5	17 16 36	257	1.62103	41	1.2743	3	0.9039	13	6.392	1	1.754	.0022	175	320
3	0.86	11 49 0	6	17 12 19	256	1.62144	41	1.2746	3	0.9026	16	6.393	1	1.756	.0022	189	333
4	0.93	11 49 6	6	17 8 3	256	1.62185	41	1.2749	3	0.9010	16	6.394	6	1.759	.0022	205	346
5	0.99	11 49 12	6	17 3 47	256	1.62226	41	1.2752	3	0.8994	18	6.400	7	1.762	.0022	220	0
6	1.06	11 49 18	7	16 59 31	256	1.62267	41	1.2755	3	0.8976	19	6.407	12	1.765	.0022	235	13
7	1.12	11 49 25	6	16 55 15	255	1.62308	41	1.2758	4	0.8957	21	6.419	12	1.768	.0022	250	26
8	1.19	11 49 31	7	16 51 0	255	1.62349	42	1.2762	3	0.8936	22	6.431	13	1.770	.0022	264	39
9	1.25	11 49 38	7	16 46 45	255	1.62391	42	1.2765	4	0.8914	23	6.444	11	1.773	.0022	278	53
10	1.32	11 49 45	7	16 42 30	254	1.62433	43	1.2769	5	0.8891	25	6.455	10	1.776	.0022	291	66
11	1.38	11 49 52	8	16 38 16	255	1.62476	43	1.2774	4	0.8866	27	6.465	6	1.778	.0023	305	79
12	1.45	11 50 0	7	16 34 1	253	1.62519	43	1.2778	4	0.8839	28	6.471	6	1.781	.0023	318	92
13	1.51	11 50 7	7	16 29 48	253	1.62562	44	1.2782	5	0.8811	29	6.477	3	1.784	.0023	330	105
14	1.58	11 50 14	8	16 25 35	253	1.62606	44	1.2787	5	0.8782	31	6.480	1	1.786	.0023	343	118
15	1.64	11 50 22	8	16 21 22	253	1.62650	44	1.2792	5	0.8751	32	6.481	1	1.789	.0023	355	131
16	1.71	11 50 30	8	16 17 9	251	1.62694	45	1.2797	5	0.8719	25	6.482	2	1.792	.0023	7	143
17	1.78	11 50 38	8	16 12 58	252	1.62739	45	1.2802	5	0.8684	35	6.484	3	1.795	.0023	19	156
18	1.84	11 50 46	8	16 8 46	251	1.62784	46	1.2807	5	0.8649	37	6.487	5	1.798	.0023	31	169
19	1.91	11 50 54	9	16 4 35	250	1.62830	46	1.2812	6	0.8612	39	6.492	6	1.800	.0023	43	182
20	1.97	11 51 3	8	16 0 25	250	1.62876	47	1.2818	6	0.8573	41	6.498	9	1.803	.0023	55	195
21	2.04	11 51 11	9	15 56 15	250	1.62923	47	1.2824	6	0.8532	42	6.507	10	1.806	.0023	66	209
22	2.11	11 51 20	9	15 52 5	249	1.62970	47	1.2830	6	0.8490	45	6.517	12	1.809	.0023	78	222
23	2.17	11 51 29	8	15 47 56	248	1.63017	48	1.2836	6	0.8445	46	6.529	11	1.812	.0023	90	235
24	2.24	11 51 37	9	15 43 48	248	1.63065	49	1.2842	6	0.8399	47	6.540	13	1.814	.0023	102	248
25	2.30	11 51 46	5	15 39 40	247	1.63114	49	1.2848	6	0.8352	50	6.553	9	1.817	.0023	115	261
26	2.37	11 51 55	9	15 35 33	247	1.63163	50	1.2854	6	0.8302	52	6.562	8	1.820	.0023	127	274
27	2.43	11 52 4	9	15 31 26	246	1.63213	50	1.2860	7	0.8250	53	6.570	7	1.823	.0023	141	287
28	2.50	11 52 13	10	15 27 20	246	1.63263	50	1.2867	6	0.8197	56	6.577	3	1.825	.0023	154	300
29	2.56	11 52 23	9	15 23 14	245	1.63313	52	1.2873	7	0.8141	58	6.580	3	1.828	.0023	168	313
30	2.63	11 52 32	9	15 19 9	244	1.63365	52	1.2880	6	0.8083	60	6.583	3	1.831	.0023	183	326
31	2.70	11 52 41		15 15 5		1.63417		1.2886		n 0.8023		− 6.586		− 1.833	.0024	198	339

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Date.	Sid. T.	G.		H.		log. *g*.		log. *h*.		log. *i*.		$f+\Delta_{☽} f$		T.	*p*.	☽	☽−r¹
1861.	h.	h. m. s.		h. m. s.								s.		y.		°	°
Nov. 1	2.76	11 52 50	10	15 11 1	243	1.63469	53	1.2893	6	*n* 0.7961	65	− 6.591	7	− 1.836	.0024	213	352
2	2.83	11 53 0	9	15 6 58	243	1.63522	54	1.2899	9	0.7896	66	6.598	11	1.839	.0024	228	5
3	2.89	11 53 9	9	15 2 55	242	1.63576	54	1.2906	6	0.7830	70	6.609	14	1.842	.0024	243	18
4	2.96	11 53 18	9	14 58 53	241	1.63630	55	1.2912	7	0.7760	72	6.623	16	1.844	.0024	258	31
5	3.02	11 53 27	10	14 54 52	241	1.63685	55	1.2919	6	0.7688	74	6.639	15	1.847	.0024	273	44
6	3.09	11 53 37	9	14 50 51	240	1.63740	56	1.2925	7	0.7614	77	6.654	13	1.850	.0025	287	58
7	3.16	11 53 46	9	14 46 51	240	1.63796	56	1.2932	6	0.7537	80	6.667	10	1.853	.0025	301	71
8	3.22	11 53 55	10	14 42 51	239	1.63852	57	1.2938	7	0.7457	83	6.677	9	1.855	.0025	314	84
9	3.29	11 54 5	9	14 38 52	238	1.63909	58	1.2945	6	0.7374	85	6.686	5	1.858	.0025	327	97
10	3.35	11 54 14	9	14 34 54	237	1.63967	58	1.2951	7	0.7289	89	6.691	4	1.860	.0025	340	110
11	3.42	11 54 23	9	14 30 57	237	1.64025	58	1.2958	6	0.7200	92	6.695	3	1.863	.0025	352	123
12	3.48	11 54 32	9	14 27 0	237	1.64083	59	1.2964	6	0.7108	96	6.698	4	1.866	.0025	4	136
13	3.55	11 54 41	9	14 23 3	236	1.64142	60	1.2970	7	0.7012	99	6.702	4	1.869	.0025	16	149
14	3.61	11 54 50	9	14 19 7	235	1.64202	61	1.2977	6	0.6913	103	6.706	7	1.871	.0025	28	162
15	3.68	11 54 59	9	14 15 12	235	1.64263	61	1.2983	6	0.6810	106	6.713	10	1.874	.0025	40	175
16	3.75	11 55 8	9	14 11 17	234	1.64324	61	1.2989	6	0.6704	111	6.723	10	1.877	.0025	52	188
17	3.81	11 55 17	8	14 7 23	233	1.64385	62	1.2995	6	0.6593	115	6.733	13	1.880	.0025	63	201
18	3.88	11 55 25	9	14 3 30	233	1.64447	63	1.3001	5	0.6478	120	6.746	13	1.882	.0025	75	214
19	3.94	11 55 34	8	13 59 37	233	1.64510	63	1.3006	6	0.6358	125	6.759	15	1.885	.0025	87	227
20	4.01	11 55 42	9	13 55 44	232	1.64573	64	1.3012	6	0.6233	130	6.774	14	1.888	.0025	99	240
21	4.08	11 55 51	8	13 51 52	232	1.64637	64	1.3018	5	0.6103	135	6.788	14	1.891	.0026	112	254
22	4.14	11 55 59	8	13 48 0	231	1.64701	64	1.3023	5	0.5968	141	6.802	10	1.894	.0026	124	267
23	4.21	11 56 7	8	13 44 9	230	1.64765	64	1.3028	6	0.5827	147	6.812	9	1.896	.0026	137	280
24	4.27	11 56 15	7	13 40 19	231	1.64829	65	1.3034	5	0.5680	154	6.821	7	1.899	.0026	150	293
25	4.34	11 56 22	8	13 36 28	230	1.64894	66	1.3039	4	0.5526	161	6.828	7	1.901	.0026	163	306
26	4.41	11 56 30	8	13 32 38	229	1.64960	66	1.3043	5	0.5365	168	6.835	4	1.904	.0026	177	319
27	4.47	11 56 38	7	13 28 49	229	1.65026	67	1.3048	5	0.5197	177	6.839	5	1.907	.0026	191	332
28	4.54	11 56 45	7	13 25 00	229	1.65093	67	1.3053	4	0.5020	186	6.844	10	1.909	.0026	206	345
29	4.60	11 56 52	7	13 21 11	228	1.65160	67	1.3057	4	0.4834	196	6.854	12	1.912	.0026	221	358
30	4.67	11 56 59	7	13 17 23	228	1.65227	68	1.3061	5	0.4638	207	6.866	15	1.915	.0026	236	11
Dec. 1	4.74	11 57 6	6	13 13 35	227	1.65295	68	1.3066	3	0.4431	218	6.881	18	1.918	.0026	251	24
2	4.80	11 57 12	7	13 9 48	227	1.65363	68	1.3069	4	0.4213	232	6.899	18	1.920	.0026	266	37
3	4.87	11 57 19	6	13 6 1	227	1.65431	68	1.3073	4	0.3981	245	6.917	18	1.923	.0026	281	50
4	4.93	11 57 25	6	13 2 14	227	1.65499	69	1.3077	3	0.3736	263	6.935	13	1.926	.0026	295	63
5	5.00	11 57 31	6	12 58 27	226	1.65568	69	1.3080	3	0.3473	280	6.948	11	1.929	.0026	309	76
6	5.06	11 57 37	6	12 54 41	226	1.65637	69	1.3083	3	0.3193	302	6.959	8	1.932	.0027	323	90
7	5.13	11 57 43	5	12 50 55	226	1.65706	69	1.3086	3	0.2891	325	6.967	7	1.935	.0027	336	103
8	5.19	11 57 48	5	12 47 9	225	1.65775	69	1.3089	2	0.2566	353	6.974	5	1.937	.0027	348	116
9	5.26	11 57 53	5	12 43 24	225	1.65844	70	1.3091	3	0.2213	387	6.979	5	1.940	.0027	1	129
10	5.32	11 57 58	5	12 39 39	225	1.65914	70	1.3094	2	0.1826	425	6.984	7	1.943	.0027	13	142
11	5.39	11 58 3	5	12 35 54	225	1.65984	70	1.3096	2	0.1401	474	6.991	8	1.945	.0028	25	155
12	5.45	11 58 8	4	12 32 9	225	1.66054	70	1.3098	2	0.0927		6.999	10	1.948	.0028	37	168
13	5.52	11 58 12	4	12 28 24	225	1.66124	70	1.3100	1	0.0394		7.009	11	1.951	.0028	48	181
14	5.58	11 58 16	4	12 24 39	224	1.66194	70	1.3101	1	9.9784		7.020	15	1.953	.0028	60	194
15	5.65	11 58 20	4	12 20 55	224	1.66264	70	1.3102	2	9.9074		7.035	15	1.956	.0028	72	207
16	5.72	11 58 24	4	12 17 11	225	1.66334	70	1.3104	0	9.8221		7.050	16	1.959	.0028	84	220
17	5.78	11 58 28	3	12 13 26	225	1.66404	70	1.3104	1	9.7158		7.066	16	1.962	.0028	96	233
18	5.85	11 58 31	3	12 9 41	224	1.66474	70	1.3105	0	9.5744		7.082	15	1.965	.0028	109	246
19	5.91	11 58 34	3	12 5 57	224	1.66544	70	1.3105	1	9.3632		7.097	12	1.967	.0028	121	259
20	5.98	11 58 37	3	12 2 13	224	1.66614	70	1.3106	0	*n* 8.9352		7.109	10	1.970	.0028	134	272
21	6.05	11 58 40	2	11 58 29	224	1.66684	70	1.3106	0	8.7847		7.119	4	1.973	.0028	147	286
22	6.11	11 58 42	2	11 54 45	225	1.66754	70	1.3106	1	9.3130		7.128	7	1.976	.0028	160	299
23	6.18	11 58 44	2	11 51 0	224	1.66824	69	1.3105	0	9.5444		7.135	7	1.979	.0028	173	312
24	6.24	11 58 46	2	11 47 16	224	1.66893	70	1.3105	1	9.6924		7.142	7	1.981	.0028	187	325
25	6.31	11 58 48	1	11 43 32	225	1.66963	68	1.3104	1	9.8041		7.149	8	1.984	.0028	201	338
26	6.37	11 58 49	2	11 39 47	225	1.67031	69	1.3103	2	9.8927		7.157	12	1.987	.0028	216	351
27	6.44	11 58 51	1	11 36 2	225	1.67100	68	1.3101	1	9.9662		7.169	15	1.990	.0028	230	4
28	6.50	11 58 52	1	11 32 17	225	1.67168	68	1.3100	2	0.0289		7.184	18	1.993	.0028	245	17
29	6.57	11 58 53	1	11 28 32	226	1.67236	68	1.3098	2	0.0836		7.202	18	1.995	.0028	260	30
30	6.64	11 58 54	0	11 24 46	225	1.67304	68	1.3096	2	0.1321		7.220	18	1.998	.0028	274	43
31	6.71	11 58 54		11 21 1		1.67372		1.3094		0.1755		− 7.238		− 2.000	.0029	289	56

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			h. m. s.		s.	° ′ ″		s.	
1	Lacaille, 9726	7 ✡	0 0 06		+3.072	−38 42 31.12	2	+20.06	
2	Lacaille, 9732	6.5 ✡	0 0 36		3.070	23 17 9.61	2	20.06	
3	Weisse XXIII, 1242	9	0 0 38.81	2	3.071	11 54		20.06	
4	Lacaille, 9735	6.5	0 0 56.12	1	3.068	−34 19		20.06	
5	α Andromedæ	1 ✡	0 1 9.32	8	3.075	+28 16		20.06	
6	Lacaille, 9737	7	0 1 39.00	1	3.065	−35 35		20.06	
7	Weisse XXIII, 1267	7.5	0 1 41.95	1	3.072	− 0 5 10.96	2	20.06	
8	Weisse XXIII, 1269	8	0 1 45.06	3	3.074	+12 1 35.25	2	20.06	
9	Lacaille, 9738	7	0 1 45.25	1	3.067	−22 57		20.06	
10	Weisse O, 4	8	0 1 57.85	3	3.074	+12 1 56.26	2	20.06	
11	Anonymous	8	0 2 41.17	2	3.075	+11 48		20.05	
12	Lacaille, 9753	6.5 ✡	0 3 42		3.056	−35 38 24.94	2	20.05	
13	Weisse O, 59	9	0 4 7.08	2	3.075	+ 8 19		20.05	
14	B. A. C., 23	6	0 4 27.43	1	3.058	−28 35		20.05	
15	Weisse O, 69	8	0 4 36.51	4	3.076	+ 8 21 43.40	2	20.05	
16	Anonymous	9	0 4 44.27	1	3.066	−12 7		20.05	
17	Lacaille, 9766	7	0 5 29.67	1	3.055	27 39		20.05	
18	Lacaille, 1	7 ✡	0 5 42		3.040	−43 56 36.30	2	20.05	
19	γ Pegasi	2 ✡	0 6 1.75	10	3.081	+14 24		20.05	
20	B. A. C., 27	6 ✡	0 6 12		3.043	−38 36 3.90	2	20.05	
21	Lacaille, 4	7 ✡	0 6 12		3.037	43 50 40.83	2	20.05	
22	Lacaille, 5	7 ✱	0 6 12		3.053	27 6 21.91	1	20.05	
23	Anonymous		0 6 18		3.042	38 41 7.46	1	20.05	
24	Lacaille, 9	6.5 ✡	0 6 42		3.052	−27 3 57.52	1	20.05	
25	Weisse O, 110	9	0 7 18.43	1	3.074	+ 2 45		20.05	
26	35¹ Piscium	6 ✡	0 7 46.26	5	3.078	8 3		20.04	
27	35² Piscium	7	0 7 46.67	3	3.078	+ 8 3		20.04	
28	Lacaille, 17	7	0 7 48.67	1	3.042	−32 57		20.04	
29	B. A. C., 37	6 ✡	0 7 54		3.039	35 40 58.35	2	20.04	
30	B. A. C., 41	7 ✡	0 8 24		3.029	41 13 49.23	2	20.04	
31	B. A. C., 43	6	0 9 3.63	1	3.039	32 13		20.04	
32	Lacaille, 26	7 ✡	0 9 36		3.035	33 32 20.76	2	20.04	
33	B. A. C., 49	6.5 ✡	0 9 42		3.034	33 27 58.43	2	20.04	
34	Weisse O, 172	8.5	0 10 38.81	1	3.064	6 56		20.03	
35	Anonymous	9	0 10 39.37	1	3.064	6 59		20.03	
36	Lacaille, 37	7.8	0 11 37.79	1	3.032	−30 44 2.22	2	20.03	
37	Weisse O, 196	9	0 12 8.26	3	3.075	+ 2 18		20.03	
38	Weisse O, 202	9 ✡	0 12 39.44	2	3.088	12 36 56.96	2	20.03	
39	Weisse O, 212	8	0 12 58.51	2	3.075	2 15		20.02	
40	δ Piscium	5.5 ✡	0 13 23.67	3	3.082	7 25		20.02	
41	Weisse O, 229	7.5	0 13 45.85	4	3.089	11 59 40.39	2	20.02	
42	Weisse O, 233	8.5	0 13 57.93	3	3.089	+11 56 11.06	2	20.02	
43	Weisse O, 239	9	0 14 14.23	1	3.055	−11 28		20.02	
44	Lacaille, 55	7	0 14 47.25	1	3.034	23 46		20.01	
45	Weisse O, 236	7	0 15 5.69	1	3.063	− 5 58		20.01	
46	Radcliffe, 79	9	0 15 7.03	1	3.157	+44 9		20.01	
47	B. A. C., 77	6.5	0 16 11.80	1	3.013	−31 49		20.01	
48	Lacaille, 78	7 ✡	0 18 06		3.007	−31 27 45.36	2	19.99	
49	45 Piscium	6 ✡	0 18 28.91	3	3.085	+ 6 55 3.55	2	19.99	
50	Lacaille, 84	7	0 18 56.68	1	3.004	−31 31 25.53	2	19.99	
51	Anonymous	7	0 19 26.63	1	3.078	+ 3 9		19.98	
52	Groombridge, 64	7	0 19 39.29	1	3.205	49 13		19.98	
53	Groombridge, 67	7.5	0 22 52.20	6	4.782	+85 33		19.96	
54	12 Ceti	6 ✡	0 22 53.67	16	3.056	− 4 44		19.96	
55	Groombridge, 73	8	0 23 31.37	1	3.174	+42 36		19.95	
56	κ Cassiopeiæ	4.5 ✡	0 25 3.98	1	3.348	+62 10		19.94	
57	Lacaille, 121	7 ✡	0 25 40.64	2	2.999	−26 7		19.93	
58	Weisse O, 436	9 ✡	0 26 12		3.096	+ 8 59 55.73	2	19.93	
59	Groombridge, 89	6.5	0 26 17.34	1	3.415	+65 59		19.92	
60	Weisse O, 444	9.2	0 26 51.05	2	3.046	− 9 29		19.92	

NOTE.—The asterisk in the column of magnitudes indicates that the magnitude is taken from the catalogue; other magnitudes are those estimated by the observer, the mean being taken where there is more than one observation.

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Number.	Name.	Magnitude.	Right Ascensions, 1860. 0.	No. of obs.	Precession.	Declinations, 1860. 0.	No. of obs.	Precession.	Remarks.
			h. m. s.		s.	° ″ ′			
61	B. A. C., 137	7.2	0 26 55.50	4	+3.098	+ 9 31 56.70	2	+19.92	
62	13 Ceti	6 ✲	0 28 2 54	1	3.059	— 4 22		19.91	
63	Weisse O, 476	8.5	0 28 16.16	3	3.093	+ 7 22 33.82	2	19.90	
64	B. A. C., 147	7	0 28 21.68	2	3.068	— 1 16		19.90	
65	B. A. C., 149	6 ✲	0 28 39.83	1	3.109	+12 27		19.90	
66	Lacaille, 142	6	0 29 8.80	1	2.998	—23 37		19.89	
67	Weisse O, 491	8 ✲	0 29 12		3.096	+ 8 6 15.02	2	19.89	
68	π Andromeda	4.5 ✲	0 29 24.61	1	3.183	+32 54		19.89	
69	B. A. C., 160	6 ✲	0 30 9.13	1	2.988	—25 32		19.88	
70	Weisse O, 510	9 ✲	0 30 30		3.094	+ 7 15 5.59	1	19.88	
71	Weisse O, 515	7.5	0 30 55.07	1	3.068	— 1 15		19.87	
72	Lacaille, 155	7 ✲	0 31 24		2.906	—42 21 45.45	2	19.87	
73	Anonymous	9 ✲	0 32 27.64	1	3.349	+55 46		19.86	
74	α Cassiopeiæ	3 ✲	0 32 34.83	4	3.349	+55 46		19.86	
75	Lacaille, 164	7 ✲	0 33 12		2.895	—42 25 35.57	2	19.85	
76	Lacaille, 167	7 ✲	0 33 29.70	1	2.983	24 33		19.84	
77	Anonymous	8.5	0 35 7.74	1	3.049	— 6 24		19.82	
78	21 Cassiopeiæ	5.5 ✲	0 36 28.01	2	3.821	+74 13		19.80	
79	β Ceti	2.3 ✲	0 36 33.62	6	3.000	—18 45		19.80	
80	Weisse O, 641	8	0 37 23.41	1	3.047	6 24		19.79	
81	Anonymous	9.5	0 37 32.85	1	3.054	4 42		19.79	
82	B. A. C., 203	5.5	0 37 48.58	1	2.980	22 47		19.78	
83	Anonymous	9.5	0 38 3.65	1	3.054	4 32		19.78	
84	Anonymous	9.5	0 38 5 92	1	3.054	— 4 33		19.78	
85	23 Cassiopeiæ	5.5 ✲	0 38 28.75	1	3.855	+74 5		19.77	
86	Lacaille, 203	6.5	0 39 14.24	1	2.974	—23 17		19.76	
87	ζ Andromeda	4 ✲	0 39 55.33	1	3.173	+23 30		19.75	
88	Weisse O, 704	8	0 40 55.16	1	3.107	8 27		19.74	
89	Weisse O, 706	9	0 40 58.34	1	3.086	+ 3 19		19.74	
90	Lacaille, 218	6.5 ✲	0 41 5.18	2	2.973	—22 29		19.73	
91	Groombridge, 148	7.5	0 41 7.51	1	3.728	+70 1		19.73	
92	Weisse O, 711	9	0 41 8.67	1	3.086	3 23		19.73	
93	δ Piscium	5 ✲	0 41 25.25	3	3.101	+ 6 49		19.73	
94	B. A. C., 230	6	0 42 23.62	1	3.009	—14 19		19.72	
95	Lacaille, 224	6	0 42 39.71	2	2.961	—24 7		19.71	
96	Lacaille, 238	6.5 ✲	0 45 48.16	2	2.949	—24 46		19.66	
97	Anonymous	9	0 46 13.58	1	3.065	1 33		19.65	
98	Lacaille, 241	6.5	0 46 20.15	1	2.944	—25 32 21.09	2	19.65	
99	B. A. C., 240	6 ✲	0 46 29.34	11	11.997	+88 16		19.65	
	S. P.		28.26	1					
100	υ^1 Cassiopea	5.5 ✲	0 46 42.99	1	3.509	+58 13		19.69	
101	Anonymous	9.5	0 48 23.96	1	3.064	— 1 33		19.61	
102	Lacaille, 252	7	0 48 31.55	1	2.938	25 26		19.61	
103	Weisse O, 820	8.7	0 48 37.12	3	3.064	1 33 11.37	2	19.61	
104	Lacaille, 256	6	0 49 7.94	1	2.917	—28 32		19.60	
105	Anonymous	9	0 49 58.48	1	3.082	+ 2 1		19.58	
106	2 Ursæ Minoris	5 ✲	0 50 16.18	1	6.768	+85 30		19.58	
107	B. A. C., 269	6.5 ✲	0 50 33.93	2	3.139	+12 56		19.57	
108	α Sculptoris	5 ✲	0 51 51.36	1	2.898	—30 7		19.55	
109	B. A. C., 277	7 ✲	0 52 42		2.855	—35 23 35.52	3	19.53	
110	B. A. C., 286	7 ✲	0 55 12.40	1	3.117	+ 8 4		19.48	
111	ε Piscium	4 ✲	0 55 40.74	8	3.112	7 8		19.47	
112	Groombridge, 227	8	0 55 57.64	1	3.574	57 14		19.46	
113	Radcliffe, 317	9	0 56 0.22	1	3.573	57 11		19.46	
114	Groombridge, 229	8.5	0 56 6.58	1	3.578	+57 17		19.46	
115	Lacaille, 303	6.5	0 59 20.76	1	2.914	—24 45		19.39	
116	Weisse O, 1076	8.5	1 1 3.49	2	3.135	+10 7		19.35	
117	e Piscium	5 ✲	1 1 9.51	3	3.102	4 55		19.35	
118	Weisse O, 1079	9	1 1 11.02	2	3.135	+10 9		19.35	
119	Lacaille, 319	8	1 3 20.19	4	2.887	—26 50		19.30	
120	Lamont, 3059	9	1 3 47.50	1	+3.061	— 1 44		+19.28	

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			h. m. s.		s.	° ″ ′			
121	35 Ceti	6.7 ✡	1 5 20.01	3	+3.083	+ 1 44		+19.25	
122	Radcliffe, 371	8.5	1 5 34.84	1	3.492	48 2		19.24	
123	Weisse I, 89	9	1 5 58.94	1	3.077	0 45		19.23	
124	Weisse I, 100	7.8	1 7 31.51	4	3.133	+ 9 0 0.64	3	19.19	
125	38 Ceti	7	1 7 40.31	3	3.060	— 1 43		19.19	
126	Weisse I, 113	7	1 8 27.43	3	3.135	+ 9 2 33.98	3	19.17	
127	Weisse I, 138	7	1 9 57.76	1	3.081	+ 1 16 32.53	2	19.13	
128	42 Ceti	5.5	1 12 38.86	1	3.063	— 1 15		19.06	
129	Weisse I, 197	8.7	1 13 7.38	5	3.085	+ 1 45 8.13	2	19.04	
130	Weisse I, 202	7	1 13 28.20	2	3.043	— 3 59		19.03	
131	Weisse I, 206	7.5	1 13 44.24	3	3.057	— 2 3		19.03	
132	δ Cassiopeiæ	3 ✡	1 16 41.15	1	3.817	+59 30		18.94	
133	θ^1 Ceti	3 ✡	1 17 1.58	21	3.003	— 8 54		18.93	
134	Weisse I, 281	9 ✡	1 17 42.07	1	3.019	— 6 43		18.92	
135	Weisse I, 299	8	1 18 35.91	3	3.149	+ 9 41		18.89	
136	ρ Piscium	5 ✡	1 18 42.72	2	3.222	+18 27		18.89	
137	94 Piscium	5 ✡	1 19 8.31	1	3.223	18 31		18.87	
138	Weisse I, 336	9	1 20 24.12	1	3.137	+ 8 3		18.84	
139	Lacaille, 416	6.5	1 21 9.78	1	2.851	—25 30		18.81	Probable error of —1*m.* in R. A.
140	μ Piscium	4.5 ✱	1 22 51.07	1	3.117	+ 5 25		18.76	
141	Weisse I, 382	8.5	1 22 55.32	2	3.158	10 22		18.76	
142	η Piscium	4 ✡	1 23 59.73	7	3.197	+14 37		18.72	
143	Lacaille, 435	7	1 25 20.71	1	2.809	—28 25		18.68	
144	Weisse I, 441	9	1 26 0.90	1	3.050	2 31		18.66	
145	B. A. C., 479	6.5	1 28 27.62	1	2.750	—32 36		18.58	
146	π Piscium	5 ✡	1 29 40.83	3	3.175	+11 25		18.54	
147	Weisse I, 508	9	1 30 2.16	1	3.089	1 52		18.53	
148	Santini, 91	7.5	1 31 6.47	1	3.089	1 56		18.49	
149	Weisse I, 539	8.5	1 31 44.45	2	3.180	+11 43		18.47	
150	Lacaille, 477	7	1 32 16.40	1	2.733	—32 53		18.45	
151	Anonymous	9	1 32 42.88	1	3.201	+13 46		18.44	
152	Anonymous	9.5	1 32 51.82	1	3.201	13 49		18.43	
153	Weisse I, 569	9.5	1 32 54.19	6	3.176	+11 10 9.91	2	18.43	
154	Anonymous	9.5	1 33 1.69	1	3.050	— 2 20		18.43	
155	Anonymous	9.5	1 33 41.73	4	3.179	+11 23 15.07	2	18.40	
156	Weisse I, 598	9 ✡	1 33 52.56	1	3.160	9 24		18.40	
157	Weisse I, 600	9 ✡	1 33 53.80	1	3.160	9 24		18.40	
158	Weisse I, 607	9 ✡	1 34 4.50	2	3.107	3 47 10.53	2	18.39	
159	ν Piscium	5 ✡	1 34 8.86	7	3.116	4 46		18.39	
160	Weisse I, 628	9.5 ✡	1 34 56.14	1	3.107	3 43 20.95	2	18.36	
161	Weisse I, 646	8.5	1 35 46.31	1	3.190	+12 15		18.33	
162	B. A. C., 527	5	1 35 49.15	1	2.719	—33 2		18.33	
163	Weisse I, 672	8	1 36 53.68	1	2.981	— 9 22		18.29	
164	ο Piscium	5 ✡	1 38 0.16	2	3.154	+ 8 27		18.25	
165	Lalande, 3237	8	1 38 42.82	2	3.046	— 2 38		18.23	
166	B. A. C., 547	6 ✡	1 40 48		3.687	+47 11 52.19	1	18.15	
167	Weisse I, 732	9	1 41 7.02	3	3.208	+13 22		18.14	
168	Lacaille, 527	7	1 42 7.59	2	2.779	—26 57		18.10	
169	Anonymous	10	1 42 11.92	1	3.211	+13 36		18.10	
170	Anonymous	8.5	1 42 27.73	1	3.213	13 43 7.06	1	18.08	
171	Lalande, 3344	8.8	1 42 34.24	3	3.212	13 39 8.97	1	18.08	
172	Anonymous	10	1 42 48.16	1	3.213	13 39		18.07	
173	Anonymous	9.5	1 43 22.84	1	3.213	+13 36		18.05	
174	Weisse I, 773	8	1 43 30.84	2	3.044	— 2 46		18.05	
175	Weisse I, 775	9 ✡	1 43 44.02	2	3.218	+14 3		18.04	
176	Weisse I, 778	9 ✡	1 43 44.47	1	3.108	3 32		18.04	
177	B. A. C., 562	6.5 ✡	1 43 54.90	1	3.790	50 47		18.03	
178	Weisse I, 807	9	1 45 31.44	3	3.222	+14 11		17.97	
179	Weisse I, 821	8.5	1 46 6.25	1	3.042	— 2 52		17.95	
180	ξ Piscium	5.5 ✡	1 46 18.55	3	+3.098	+ 2 30		+17.94	

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			h. m. s.		s.	° ′ ″		″	
181	β Arietis	3 ✡	1 46 54.67	14	+3.292	+20 7		+17.91	
182	Weisse I, 860	9	1 48 21.12	1	3.103	2 53		17.86	
183	ι Arietis	6 ✡	1 49 42.43	1	3.262	+17 8		17.80	
184	58 Ceti	6	1 50 52.54	2	3.042	— 2 45		17.75	
185	47 Cassiopeiæ	6.5 ✡	1 51 13.93	2	5.690	+76 36		17.74	
186	Anonymous	10.5	1 52 30.97	1	3.246	+15 28		17.69	
187	Lalande, 3702	6	1 52 54.48	1	2.748	—27 7		17.67	
188	B. A. C., 619	6 ✡	1 53 36.02	1	2.511	—41 24		17.64	
189	Weisse I, 963	9.7	1 54 23.04	2	3.110	+ 3 22		17.61	
190	Weisse I, 969	8.5	1 54 36.24	1	3.202	11 30		17.60	
191	Weisse I, 978	7	1 55 10.95	2	3.167	8 24		17.58	
192	Weisse I, 984	9	1 55 25.43	4	3.108	3 10		17.57	
193	54 Cassiopeiæ	6.5 ✡	1 57 7.17	2	4.960	70 54		17.49	
194	Weisse I, 1042	7.5	1 58 56.75	1	3.222	12 47		17.42	
195	Weisse I, 1043	8.5	1 59 7.14	1	3.236	13 54 51.51	2	17.41	
196	α Arietis	2 ✡	1 59 17.24	12	3.351	22 48		17.40	
197	Weisse I, 1047	9	1 59 20.23	2	3.238	13 59		17.40	
198	Weisse I, 1050	9	1 59 20.64	1	3.238	13 55		17.40	
199	Weisse I, 1056	9	1 59 30.36	3	3.110	3 14 6.98	2	17.39	
200	Anonymous	9	1 59 46.57	2	3.108	3 6		17.38	
201	B. A. C., 663	6.5 ✡	2 2 22.57	2	3.114	3 34		17.26	
202	Arg. Z. N., 145, 126	8.5	2 2 50.67	3	3.856	48 56 10.20	1	17.24	
203	Arg. Z. N., 153, 111	8.5 ✡	2 3 37.67	2	3.865	49 7		17.21	
204	Groombridge, 466	6.5	2 4 12.05	4	3.968	+52 24		17.18	
205	Anonymous	9	2 4 14.30	1	2.692	—28 52		17.18	
206	Lacaille, 649	7 ✡	2 4 24.40	2	2.691	—28 52		17.17	
207	Arg. Z. N., 55, 49	6.5	2 4 30.72	1	3.967	+52 20		17.17	
208	η Arietis	6 ✡	2 4 58.17	2	3.332	20 33		17.15	
209	Anonymous	9.5	2 5 14.61	1	4.027	53 58		17.14	
210	Arg. Z. N., 154, 131	8	2 5 23.22	2	4.025	53 52		17.13	
211	19 Arietis	6.5	2 5 25.38	2	3.253	14 37		17.13	
212	Weisse II, 64	8.7	2 5 26.71	3	3.240	13 35 3.40	2	17.13	
213	B. A. C., 687	6.7	2 6 10.59	4	3.125	4 21 25.38	2	17.09	
214	Weisse II, 102	9 ✡	2 7 40.54	1	3.124	4 13		17.02	
215	Rumker, 568	8.7	2 7 42.34	3	3.292	17 15 50.48	2	17.02	
216	Weisse II, 112	9	2 8 28.27	1	3.134	5 0		16.99	
217	B. A. C., 700	6.5 ✡	2 9 16.09	1	4.151	56 29		16.95	
218	B. A. C., 701	7 ✡	2 9 25.19	1	4.154	+56 31		16.94	
219	67 Ceti	6 ✡	2 10 0.09	10	2.983	— 7 4		16.92	
220	Lalande, 4238	7.5	2 10 0.83	1	3.303	+17 48		16.91	
221	Weisse II, 143	8	2 10 27.48	3	3.249	13 49		16.89	
222	Weisse II, 144	8	2 10 31.64	2	3.235	12 47		16.89	
223	Weisse II, 158	7	2 11 16.84	4	3.168	7 32		16.85	
224	Radcliffe, 691	8	2 13 6.44	1	4.189	56 42		16.77	
225	Weisse II, 209	9.5	2 13 53.16	1	3.246	13 18		16.73	
226	Arg. Z. N., 59, 20	9	2 13 53.90	4	4.461	62 2		16.73	
227	Weisse II, 235	8	2 15 30.73	2	3.175	+ 7 54		16.65	
228	Lacaille, 711	7	2 15 49.46	1	2.667	—28 29		16.64	
229	Santini, 138	7	2 17 1.90	2	3.192	+ 9 4 43.88	1	16.58	
230	B. A. C., 743	6 ✡	2 17 8.62	1	2.678	—27 38		16.57	
231	B. A. C., 744	4 ✡	2 17 34.93	1	4.831	+66 46 13.47	2	16.55	
232	B. A. C., 740	6 ✡	2 17 42.57	2	7.855	81 1 10.42	3	16.54	
233	Bessel Z., 332, 45	8.5	2 17 51.07	1	3.331	18 55		16.54	
234	Bessel Z., 27, 25	8 ✡	2 19 3.03	2	3.384	22 14 48.51	2	16.48	
235	Bessel Z., 27, 26	9.5 ✡	2 19 16.36	2	3.384	22 16 21.49	2	16.47	
236	Anonymous	10	2 19 24.14	1	4.456	61 6		16.46	
237	Carrington, 347	9 ✡	2 19 32.14	2	30.328	88 24		16.45	
238	ξ^2 Ceti	4 ✡	2 20 43.10	17	3.178	7 50		16.39	
239	Weisse II, 333	9.2	2 20 48.75	4	3.145	5 25 40.30	1	16.39	
240	27 Arietis	6 ✡	2 23 8.72	1	+3.112	+17 5		+16.27	

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			h. m. s.		s.	° ′ ″		″	
241	Weisse II, 415	7.5	2 25 22.19	2	+3.115	+ 3 7 8.77	1	+16.16	
242	Bessel Z., 391, 35	8.5	2 25 37.26	1	3.358	+19 49		16.14	
243	Weisse II, 437	8	2 26 55.09	1	2.979	— 6 37		16.07	
244	Anonymous	8.5	2 27 20.72	1	3.121	+ 3 31		16.05	
245	B. A. C., 789	6.5 ✡	2 27 39.49	1	3.168	6 51		16.04	
246	Weisse II, 455	8	2 27 50.79	2	3.121	+ 3 30 47.15	2	16.03	
247	B. A. C., 809	6 ✡	2 31 9.84	1	2.495	—35 10		15.85	
248	B. A. C., 814	6 ✡	2 32 49.57	2	5.042	+67 14		15.76	
249	Weisse II, 556	9 ✡	2 32 54		3.295	+15 5 0.95	2	15.76	
250	Weisse II, 576	8	2 33 35.22	1	2.990	— 5 37		15.72	
251	Weisse II, 575	9 ✡	2 33 42		3.295	+15 2 25.90	2	15.71	
252	Weisse II, 585	7.2	2 34 2.61	4	3.128	3 49 41.50	2	15.69	
253	μ Arietis	6 ✡	2 34 28.64	1	3.366	19 25		15.67	
254	γ Ceti	3 ✡	2 36 2.92	18	3.111	2 39		15.58	
255	Bessel Zone, 391, 44	8.5	2 36 50.63	2	3.397	21 1 12.77	2	15.54	
256	Anonymous		2 36 54		3.532	+28 32 58.59	1	15.54	
257	Weisse II, 640	8.5	2 37 21.67	1	2.996	— 5 7		15.51	
258	Lacaille, 846	7 ✡	2 37 42		2.611	—28 29 40.50	1	15.49	
259	Anonymous		2 40 00		3.464	+24 29 40.93	1	15.36	
260	η Persei	4 ✡	2 40 30.38	1	4.317	55 19		15.34	
261	B. A. C., 866	6.5 ✡	2 40 36		3.467	24 37 6.14	1	15.33	
262	41 Arietis	3 ✡	2 41 44.98	3	3.508	26 41		15.26	
263	16 Persei	4.5 ✡	2 41 45.23	2	3.743	37 44		15.26	
264	σ Arieties	6 ✡	2 43 45.94	1	3.298	+14 30		15.15	
265	γ^2 Fornacis, (883)	6 ✡	2 43 48		2.596	—28 31 27.42	1	15.15	
266	Weisse II, 762	8.5	2 44 19.02	1	3.045	— 1 44		15.12	
267	τ Persei	5 ✡	2 44 21.05	1	4.205	+52 11		15.11	
268	Lacaille, 900	7	2 45 26.19	1	2.541	—31 0		15.05	
269	B. A. C., 894	6 ✡	2 46 0.64	1	2.531	31 24		15.02	
270	Lacaille, 908	7 ✡	2 47 0.36	1	2.700	—22 39		14.96	
271	Anonymous	8	2 47 28.82	1	3.308	+14 49		14.94	Probably 1*m.* more R. A.
272	Anonymous	9.5	2 48 10.71	4	3.308	14 47 51.10	2	14.89	This declination may belong to the preceding star.
273	Anonymous	9.5	2 48 28.34	4	3.309	14 47 44.74	2	14.88	
274	ρ^3 Arietis	6 ✡	2 48 32.24	2	3.354	+17 28		14.87	
275	Lacaille, 918	7	2 48 43.73	1	2.523	—31 26		14.86	
276	Weisse II, 846	9	2 48 45.56	1	3.071	0 3		14.86	
277	Weisse II, 853	9	2 49 2.81	1	3.071	— 0 3		14.84	
278	Weisse II, 855	8.5	2 49 27.35	1	3.306	+14 34		14.82	
279	Rumker, 755	7.5	2 50 28.64	3	3.322	15 25 48.57	1	14.76	
280	ε Arietis	5 ✡	2 51 12.69	4	3.417	20 47		14.72	
281	γ Persei	3.5 ✡	2 54 40.64	1	4.295	52 57		14.51	
282	α Ceti	2.5 ✡	2 54 57.79	9	3.129	+ 3 32		14.49	
283	Weisse II, 970	6.5	2 55 13.84	1	2.958	— 7 2		14.47	
284	Bessel Zone, 27, 70	8	2 55 21.87	3	3.456	+22 30 33.01	2	14.47	
285	ρ Persei, (953)	4 ✡	2 56 12.76	1	3.806	38 17 41.11	1	14.42	
286	β Persei	2.5 ✡	2 59 4.33	1	3.874	40 25		14.24	
287	53 Arietis	6 ✡	2 59 33.03	1	3.366	17 20		14.21	
288	B. A. C., 960	6 ✡	2 59 52.05	1	12.719	+84 24		14.19	
289	Anonymous	9	3 3 24.19	1	2.543	—28 52		13.97	
290	Anonymous		3 3 31.99	1	2.535	—29 14		13,96	
291	Weisse III, 35	9	3 3 35.16	1	3.210	+ 8 11		13.96	
292	δ Arietis	4 ✡	3 3 37.70	14	3.406	+19 12		13.96	
293	Anonymous		3 3 49.96	1	2.534	—29 14		13.94	
294	Bessel Zone, 448, 4	9	3 4 6.70	1	3.836	+38 26 36.24	2	13.92	
295	Bessel Zone, 448, 5	8.5 ✡	3 4 23.68	1	3.837	38 26 18.71	1	13.91	
296	Bessel Zone, 337, 32	8.5	3 4 24.03	1	3.363	16 48		13.91	
297	Weisse III, 62	9 ✡	3 5 06		3.269	8 3 54.13	2	13.86	
298	ζ Arietis	5 ✡	3 6 51.57	4	3.437	20 32		13.75	
299	Bessel Zone, 530, 91	9	3 7 54.90	2	3.504	23 50 42.32	1	13.68	
300	Anonymous	9.5	3 10 7.85	1	+3.507	+23 48		+13.54	

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			h m. s.		s.	° ′ ″		″	
301	60 Arietis	7 ✡	3 12 8.13	1	+3.539	+25 9		+13.41	
302	τ^1 Arietis	5 ✡	3 13 9.13	1	3.448	20 38		13.35	
303	Weisse III, 233	8.5 ✡	3 13 42		3.254	10 7 24.55	2	13.31	
304	Rumker, 845	✡	3 13 54		3.523	24 14 45.91	2	13.30	
305	Anonymous	9	3 14 0.71	1	3.228	8 50		13.29	
306	Anonymous	8.5	3 14 16.89	2	3.225	8 42		13.27	
307	α Persei	2.5 ✡	3 14 20.67	5	4.240	49 22		13.27	
308	Weisse III, 306	9 ✡	3 17 57.19	1	3.309	13 7		13.03	
309	Bessel Zone, 508, 94	8 ✡	3 18 23.23	1	3.854	37 33 10.35	2	13.00	Probably 1*m.* too large in R. A.
310	Weisse III, 334	8 ✡	3 19 36.20	1	3.294	12 15		12.92	
311	Anonymous	8.5	3 20 38.31	1	3.295	12 15		12.85	
312	B. A. C., 1061	6 ✡	3 21 2.74	6	18.546	86 12		12.82	
313	Groombridge, 698	7.5	3 22 44.51	1	4.012	42 16		12.71	
314	Bessel Zone, 508, 101	9	3 22 53.13	2	3.852	36 59 42.53	1	12.70	
315	Anonymous		3 22 54		3.852	37 0 4.26	1	12.70	
316	Anonymous	9.5	3 22 59.46	1	3.853	37 2		12.62	
317	Weisse III, 428	8 ✡	3 24 36		3.201	7 5 18.10	2	12.56	
318	9 Tauri	6 ✡	3 28 44.36	3	3.515	+22 45		12.30	
319	B. A. C., 1109	6 ✡	3 28 57.00	1	2.402	−32 21		12.28	
320	δ Persei	3 ✡	3 32 57.45	1	4.234	+47 20		12.00	
321	B. A. C., 1130	5.5 ✡	3 32 58.38	2	2.493	−28 24		12.00	
322	Bessel Zone, 396, 35	8.5 ✡	3 34		3.599	+26 7 21.19	1	11.93	
323	16 Tauri	5.5 ✡	3 36 29.20	1	3.551	23 51		11.75	
324	17 Tauri	4.5 ✡	3 36 34.01	8	3.547	+23 40		11.75	
325	B. A. C., 1150	5 ✡	3 36 40.91	1	2.384	−32 23		11.74	
326	18 Pleiadum	8 ✡	3 39 0.24	1	3.551	+23 42		11.59	
327	24 Tauri, (1164)	7 ✡	3 39 2.02	9	3.551	23 41		11.57	
328	η Tauri	3 ✡	3 39 10.01	15	3.551	23 40		11.56	
329	Bessel Zone, 396, 45	9 ✡	3 39 48		3.609	26 9 13.61	1	11.52	
330	B. A. C., 1171	7 ✡	3 40 10.01	1	3.558	23 55		11.49	
331	27 Tauri	5 ✡	3 40 50.50	6	3.552	23 37		11.44	
332	28 Tauri	5.5 ✡	3 40 51.67	4	3.554	23 42		11.44	
333	Rumker, 994	6.5	3 40 56.23	1	3.560	23 58		11.44	
334	B. A. C., 1182	6	3 41 1.38	1	3.560	23 57		11.43	
335	Bessel Zone, 402, 10	8.5	3 41 51.96	1	3.834	34 40 14.70	1	11.37	
336	Lalande, 7069	7.5	3 42 10.73	1	3.246	8 59		11.35	
337	Bessel Zone, 402, 13	8	3 42 27.86	2	3.821	+34 10 46.48	1	11.33	
338	Lacaille, 1271	7	3 47 53.25	1	2.584	−23 32		10.93	
339	Lacaille, 1291	7	3 50 32.27	1	2.418	30 5		10.74	
340	γ^1 Eridani	2.5 ✡	3 51 29.97	10	2.792	13 55		10.67	
341	B. A. C., 1250	6	3 55 5.56	1	2.388	−30 53		10.40	
342	A^1 Tauri	5 ✡	3 56 25.32	4	3.529	+21 42		10.30	
343	Bessel Zone, 397, 35	9 ✡	3 56 48		3.670	27 29 44.34	2	10.26	
344	Weisse IV, 21	9 ✡	4 2 34.75	1	3.222	7 20		9.83	
345	Rumker, 1104	9.5	4 3 41.91	2	3.695	+28 4		9.75	
346	o^1 Eridani	4.5 ✡	4 5 2.02	7	2.924	− 7 12		9.64	
347	46 Tauri	5	4 6 0.94	2	3.223	+ 7 21		9.57	
348	Bessel Zone, 521, 8	8 ✡	4 7		3.590	23 43 22.21	2	9.49	
349	Bessel Zone, 393, 68	9	4 7 20.28	1	3.523	20 55		9.47	
350	Anonymous		4 7 28.31	1	3.507	20 15		9.45	
351	B. A. C., 1307	6.5 ✡	4 8 42		4.466	49 42 11.14	3	9.36	
352	ω^2 Tauri	5.5 ✡	4 9 3.63	1	3.508	20 14		9.33	
353	Anonymous		4 11		4.095	46 43 15.98	1	9.19	
354	56 Tauri	6.5	4 11 19.60	3	3.539	21 26		9.16	
355	γ Tauri	3.4 ✡	4 11 49.78	2	3.397	15 17		9.12	
356	δ Tauri	4 ✡	4 14 51.82	1	3.443	17 13		8.88	
357	63 Tauri, (1350)	6 ✡	4 15 23.19	1	3.426	+16 27		8.84	
358	B. A. C., 1355	6 ✡	4 15 42.86	1	2.485	−26 4		8.81	
359	Bessel Zone, 397, 54	9 ✡	4 16 52.27	1	3.745	+29 12		8.72	
360	70 Tauri, (1366)	7	4 17 37.95	1	+3.409	+15 37		+ 8.66	

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361	υ Tauri	5 ✡	4 17 56.08	1	+3.572	+22 30		+ 8.64	
362	ε Tauri	3.4 ✡	4 20 26.68	8	3.486	+18 52		8.44	
363	Lalande, 8431	7	4 21 11.51	1	2.826	—11 26		8.38	
364	Anonymous	10	4 22 22.93	2	3.747	+28 59 34.48	1	8.29	
365	Anonymous	10	4 22 39.56	2	3.747	29 0		8.26	
366	85 Tauri, (1402)	6 ✡	4 23 52.18	2	3.412	+15 33		8.17	
367	Lacaille, 1483	7 ✡	4 24 37.29	1	2.545	—23 19		8.11	
368	Rumker, 1235	9	4 24 49.87	1	3.416	+15 42		8.09	
369	B. A. C., 1404	6 ✡	4 24 53.98	1	2.344	—30 45		8.09	
370	Anonymous	10	4 24 58.26	1	3.750	+28 26		8.08	
371	α Tauri	1 ✡	4 27 53.40	6	3.430	16 14		7.85	
372	Bessel Zone, 398, 81	9	4 29 38.17	2	3.759	29 6		7.70	
373	Bessel Zone, 393, 103	9.5	4 33 0.96	2	3.584	+22 24		7.43	
374	Lacaille, 1540	7 ✡	4 33 10.48	1	2.467	—25 58		7.41	
375	Bessel Zone, 393, 104	9.5	4 33 19.14	2	3.583	+22 21		7.41	
376	Bessel Zone, 394, 105	9 ✡	4 33 20.57	1	3.585	22 27		7.40	
377	Weisse IV, 727	8 ✡	4 33 42		3.120	2 13 50.33	1	7.37	
378	τ Tauri	5 ✡	4 33 50.74	1	3.592	22 41		7.36	
379	Weisse IV, 732	9 ✡	4 34 0.86	1	3.145	+ 3 23 8.73	2	7.35	
380	54 Eridani, (1451)	4 ✡	4 34 19.17	1	2.620	—19 57		7.32	
381	Weisse IV, 754	8	4 34 54.58	2	3.131	+ 2 43		7.28	
382	μ Eridani	5 ✡	4 38 30.16	1	2.995	— 3 31		6.98	
383	Anonymous	10	4 40 55.60	1	3.037	1 37		6.78	
384	Anonymous		4 41 32.79	2	3.037	— 1 37		6.73	
385	i Tauri	5.5 ✡	4 43 11.24	1	3.497	+18 36		6.60	
386	Bessel Zone, 396, 104	8 ✡	4 43 42		3.703	+26 32 28.02	1	6.55	
387	Lacaille, 1631	7 ✡	4 44 52.98	1	2.062	—38 51		6.46	
388	Groombridge, 892	6.5 ✡	4 45		4.730	+52 38 13.52	2	6.45	
389	Bessel Zone, 393, 120	9.5	4 45 27.07	1	3.597	22 30		6.41	
390	ι Aurigæ	4 ✡	4 47 52.75	6	3.896	32 56		6.20	
391	Anonymous	9	4 48 20.00	1	3.804	29 56		6.17	
392	Bessel Zone, 398, 97	9	4 48 32.96	1	3.805	29 57		6.15	
393	k Tauri	6 ✡	4 49 35.46	1	3.662	24 50		6.06	
394	Anonymous		4 54 0.74	1	4.380	45 35		5.69	
395	ι Tauri	4.5 ✡	4 54 43.77	3	3.574	21 23		5.64	
396	Anonymous	8.5	4 55 37.18	1	3.819	30 11		5.56	
397	Anonymous	8	4 55 38.41	1	3.819	30 11		5.56	
398	Anonymous		4 55 59.95	1	4.370	45 16 30.61	2	5.53	
399	Anonymous		4 57		4.361	+45 3 50.40	2	5.83	
400	ε Leporis	4 ✡	4 59 32.18	9	2.536	—22 34		5.23	
401	Rumker, N. F., 2553	8	5 2 9.02	1	3.823	+30 7		5.00	
402	Bessel Zone, 513, 5	9	5 3 39.08	1	3.828	30 14		4.88	
403	Bessel Zone, 396, 127	8	5 3 41.57	2	3.712	26 17		4.88	
404	Bessel Zone, 513, 7	8	5 5 17.43	1	3.828	30 12		4.74	
405	α Aurigæ	1 ✡	5 6 21.03	4	4.413	+45 51		4.65	
406	β Orionis	1 ✡	5 7 48.70	7	2.880	— 8 22		4.53	
407	n Tauri	5.5 ✡	5 10 54		3.598	+21 56 52.76	1	4.26	
408	Bessel Zone, 405, 6	7	5 11 6.28	1	3.712	+26 6		4.25	
409	o Columbæ	5 ✡	5 12 26.08	1	2.155	—35 2		4.13	
410	B. A. C., 1661	8 ✡	5 14 44.17	1	3.151	+ 3 26		3.94	
411	B. A. C., 1673	6	5 16 12.69	1	2.170	—34 29		3.81	
412	Bessel Zone, 513, 24	8.5	5 16 36.68	2	3.848	+30 34		3.77	
413	β Tauri	2 ✡	5 17 26.53	6	3.785	+28 29		3.70	
414	B. A. C., 1708	6 ✡	5 20 33.58	1	2.791	—12 1		3.44	
415	Lacaille, 1840	6	5 20 47.17	1	2.237	—32 21		3.42	
416	Bessel Zone, 405, 16	9	5 22 20.25	1	3.729	+26 28		3.28	
417	Bessel Zone, 513, 31	9	5 22 52.83	1	3.859	+30 49		3.23	
418	δ Orionis	2 ✡	5 24 51.31	7	3.063	— 0 24		3.06	
419	121 Tauri, (1742)	6 ✡	5 26 54.06	2	3.660	+23 57		2.89	
420	Bessel Zone, 513, 37	9	5 27 0.86	1	+3.869	+31 4		+ 2.88	

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421	θ^1 Orionis	6 ✡	5 28 24.01	1	+2.944	— 5 29		+ 2.76	
422	θ^2 Orionis	6 ✡	5 28 30.39	1	2.944	5 31		2.75	
423	ε Orionis	2.5 ✡	5 29 6.63	9	3.042	— 1 18		2.70	
424	Anonymous		5 29 16.65	1	3.705	+25 32		2.68	
425	ζ Tauri	3.5 ✡	5 29 16.77	2	3.582	21 3 12.69	2	2.68	
426	Bessel Zone, 405, 28	7	5 30 13.92	2	3.733	+26 30		2.60	
427	α Columbæ	2 ✡	5 34 34.92	10	2.171	—34 9		2.22	
428	Lacaille, 1936	5.5	5 34 39.14	1	2.220	32 40		2.21	
429	B. A. C, 1817	6	5 38 7.43	1	2.192	—33 29		1.91	
430	129 Tauri	6 ✡	5 38 42		3.448	+15 45 51.37	1	1.86	
431	131 Tauri, (1827)	6 ✡	5 39 14.75	1	3.415	14 26		1.81	
432	Weisse V, 1034	9	5 41 22.67	1	3.303	+ 9 49 (9.50)		1.63	
433	Anonymous	8	5 41 26.89	1	2.750	—13 35		1.62	
434	Lacaille, 1990	6	5 41 36.53	1	2.343	—28 41		1.60	
435	B. A. C., 1851	6 ✡	5 42 19.93	2	3.303	+ 9 49		1.54	
436	136 Tauri	4.5 ✡	5 44 31.59	2	3.769	27 34 30.64	2	1.35	
437	B. A. C., 1867	6.5	5 44 59.73	1	3.565	20 16		1.31	
438	χ^1 Orionis	5 ✡	5 46 5.51	4	3.564	20 15		1.22	
439	B. A. C., 1881	6 ✡	5 46 47.79	1	6.199	66 53		1.15	
440	Bessel Zone, 405, 56	9	5 46 55.95	2	3.736	26 26		1.14	
441	α Orionis	1	5 47 35.61	3	3.245	+ 7 23		1.08	
442	λ Columbæ	5 ✡	5 48 1.98	1	2.177	—33 50		1.05	
443	Bessel Zone, 524, 72	8.2	5 48 59.97	2	3.611	+21 58		0.96	
444	θ Aurigæ	4 ✡	5 50 10.24	1	4.086	37 12		0.95	
445	Anonymous	8	5 50 12.04	1	3.551	19 44		0.86	
446	B. A. C., 1879, S. P.	6 ✡	5 50 13.01	3	26.677	86 46		0.86	
447	Bessel Zone, 346, 47	8.5	5 51 43.91	1	3.560	20 4		0.73	
448	Bessel Zone, 346, 49	8	5 51 58.62	1	3.560	+20 3		0.70	
449	γ Columbæ	4 ✡	5 52 34.39	1	2.126	—35 18		0.65	
450	Anonymous		5 53 44.26	1	3.734	+26 20		0.55	
451	Rumker, 1673	8.5	5 54 44.82	1	3.732	26 17		0.46	
452	Bessel Zone, 518, 90	8	5 54 45.12	2	3.986	34 22		0.46	
453	B. A. C., 1930	6.5 ✡	5 54 47.37	1	3.498	17 40		0.46	
454	Rumker, 1680	8	5 55 9.37	1	3.734	26 21		0.42	
455	χ^3 Orionis	5 ✡	5 55 10.15	1	3.550	19 41		0.42	
456	χ^4 Orionis	5 ✡	5 55 36.26	1	3.562	20 8		0.38	
457	1 Geminorum	5 ✡	5 55 36.60	2	3.647	+23 16 0.96	3	0.38	
458	B. A. C., 1941	6	5 56 11.72	1	2.173	—33 55		0.33	
459	Lalande, 11513	6.5 ✡	5 57 58.04	1	4.054	+36 17		0.18	
460	Lalande, 11528	6.5 ✡	5 58 29.54	1	4.047	36 5		0.13	
461	ν Orionis	4.5	5 59 34.73	6	3.425	14 47		+ 0.04	
462	Bessel Zone, 525, 97	8	6 2 38.80	1	3.884	31 16		— 0.23	
463	η Geminorum	4	6 6 25.59	7	3.627	22 32 38.04	1	0.56	
464	Anonymous	8.5	6 6 25.71		4.233	40 59		0.56	
465	Bessel Zone, 522, 159	8	6 7 26.95	1	4.232	40 56		0.65	
466	Lalande, 12053	8 ✡	6 12 9.64	1	3.589	21 11		1.06	
467	B. A C., 2038	7 ✡	6 12 52.00	1	3.590	21 11		1.13	
468	B. A. C., 2039	7 ✡	6 12 59.32	1	3.592	21 16		1.14	
469	μ Geminorum	3 ✡	6 14 29.39	6	3.627	22 35		1.27	
470	Anonymous		6 25 44.40	1	5.476	+61 4		2.25	
471	Weisse VI, 782	8.5	6 26 5.39	1	2.724	—14 44		2.28	
472	Weisse VI, 809	8	6 26 56.79	1	2.723	—14 43		2.35	
473	51 Aurigæ	5.5 ✡	6 28 56.99	1	4.166	+39 31		2.53	
474	γ Geminorum	2.5 ✡	6 29 37.35	6	3.465	16 31		2.58	
475	Bessel Zone, 348, 101	8	6 31 33.67	1	3.656	23 48		2.75	
476	51 (Hev.) Cephei	5 ✡	6 33 37.75	16	30.591	87 15		2.95	
	S. P.		38.75	10					
477	ε Geminorum	3 ✡	6 35 19.00	3	3.696	25 16		3.08	
478	28 Geminorum	6 ✡	6 35 53.01	1	3.808	+29 7		3.13	
479	α Canis Majoris	1	6 38 58.75	4	2.681	—16 31		3.40	
480	11 Canis Majoris, (2221)	6 ✡	6 40 27.95	1	+2.737	—14 17		— 3.52	

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481	59 Aurigæ	6 ✡	6 43 23.07	2	+4.137	+39 2		— 3.77	
482	Weisse VI, 1351	8	6 44 24.74	2	2.731	—14 35		3.86	
483	Anonymous		6 44 55.61	1	2.399	—27 10		3.91	
484	16 Lyncis	6 ✡	6 47 23.76	1	4.392	+45 16		4.12	
485	B. A. C., 2266	6 ✡	6 47 59.65	2	2.367	—28 21		4.17	
486	Lacaille, 2519	6.5	6 50 37.45	1	2.269	—31 36		4.39	
487	Arg. Z. N, 93, 90	8.5 ✡	6 50 46.25	1	5.406	+60 48		4.41	
488	ε Canis Majoris	2.3 ✡	6 53 7.52	10	2.357	—28 47		4.61	
489	ω Geminorum	6 ✡	6 54		3.662	+24 24 40.60	2	4.68	
490	ζ Geminorum	4 ✡	6 55 48.16	2	3.564	20 46 19.16	1	4.83	
491	44 Geminorum	6.7 ✡	6 56 52.47	2	3.618	22 51		4.93	
492	17 Lyncis	6 ✡	6 57 4.25	1	5.411	61 0		4.94	
493	Rumker, 2086	7.5 ✡	6 57 11.25	1	5.406	+60 58		4.95	
494	γ Canis Majoris	4 ✡	6 57 25.51	8	2.714	—15 26		4.97	
495	B. A. C., 2331	7 ✡	7 0 23.86	2	3.828	+30 22		5.22	
496	τ Geminorum	5 ✡	7 2 12		3.830	30 28 14.35	3	5.38	
497	B. A. C., 2341	5.5 ✡	7 2 27.76	2	4.700	51 39		5.40	
498	Anonymous		7 3 26.80	1	3.604	22 28		5.48	
499	B. A. C., 2363	6.5	7 5 53.80	2	3.668	24 57		5.69	
500	Bessel Zone, 492, 6	7	7 6 4.36	2	4.234	+42 10		5.70	
501	B. A. C., 2371	6 ✡	7 6 40.57	2	2.315	—30 35		5.75	
502	B. A. C., 2383	7 ✡	7 8 22.68	1	3.721	+26 56		5.90	
503	Weisse VII, 320	9	7 11 9.85	1	3.345	12 6		6.13	
504	δ Geminorum	3 ✡	7 11 45.57	11	3.592	22 14 11.90	3	6.18	
505	Weisse VII, 368	9	7 12 57.20	1	3.352	+12 25		6.28	
506	B. A. C., 2420	6 ✡	7 13 8.33	1	2.323	—30 33		6.29	
507	Weisse VII, 387	9	7 13 27.97	1	3.368	+13 7		6.32	
508	Anonymous	8.5	7 14 37.57	1	2.746	—14 26		6.42	
509	ι Geminorum	4 ✡	7 17		3.744	+28 4 21.45	1	6.61	
510	Lacaille, 2767	7	7 17 13.69	1	2.167	—35 39		6.63	
511	Anonymous	8.5	7 17 43.29	2	2.747	14 27		6.67	
512	B. A. C., 2453	6.5 ✡	7 18 13.20	3	2.339	—30 11		6.71	
513	Weisse VII, 551	7 ✡	7 18 44.83	2	3.314	+10 53		6.76	
514	22 Lyncis	6 ✡	7 19 17.50	1	4.569	49 57		6.80	
515	63 Geminorum	6 ✡	7 19 25.56	1	3.573	21 44		6.81	
516	Weisse VII, 569	8.5	7 19 26.97	1	3.303	10 24		6.82	
517	Anonymous	8.5	7 19 39.43	1	3.301	10 19		6.83	
518	Anonymous	8.5	7 20 35.04	1	3.423	+15 37		6.91	
519	Anonymous	8.5	7 20 45.92	1	2.822	—11 17		6.92	
520	B. A. C., 2470	6 ✡	7 21 16.76	2	2.822	—11 16		6.96	
521	Bessel Zone, 276, 244	8.5	7 23 38.34	1	3.423	+15 41		7.16	
522	Bessel Zone, 276, 245	8.5	7 23 38.66	1	3.422	15 39		7.16	
523	a^1 Geminorum	3 ✡	7 25 39.28	3	3.856	32 11		7.32	
524	a^2 Geminorum	1.2 ✡	7 25 39.70	9	3.856	32 11 29.63	2	7.32	
525	υ Geminorum	5 ✡	7 27 17.67	1	3.710	27 12		7.46	
526	f Geminorum	6 ✡	7 31 23.27	2	3.472	17 59		7.79	
527	α Canis Minoris	1	7 31 58.35	3	3.192	5 35		7.83	
528	Anonymous	8.5	7 33 24.05	1	3.298	10 26		7.95	
529	Anonymous		7 34 0.72	1	3.368	13 34		8.00	
530	B. A. C., 2544	7 ✱	7 35 1.63	2	3.585	22 44		8.08	
531	κ Geminorum	4 ✡	7 35 59.58	2	3.635	24 44		8.16	
532	β Geminorum	2 ✡	7 36 44.63	3	3.731	28 22		8.22	
533	g Geminorum	6 ✡	7 38 0.94	1	3.487	18 51		8.32	
534	π Geminorum	5.5 ✡	7 38 28.36	1	3.884	33 45		8.35	
535	Radcliffe, 2020, S. P.	7.4 ✡	7 38 59.78	1	20.833	86 6		8.40	
536	Rumker, 2282		7 39 28.72	1	3.356	+13 10		8.44	
537	B. A. C., 2599	6.5 ✡	7 43 9.24	1	2.522	—24 34		8.73	
538	ξ Navis	3.4 ✡	7 43 24.45	3	2.523	—24 31		8.74	
539	φ Geminorum	5 ✡	7 44 55.45	2	3.686	+27 7		8.86	
540	Lacaille, 3012	6.5	7 45 5.44	1	+2.534	—24 9		— 8.88	

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			h. m. s.		s.	° ″ ′			
541	85 Geminorum	6.5 ✡	7 47 29.41	1	+3.511	+20 15		— 9.06	
542	Lacaille, 3073	8	7 50 53.14	1	2.389	—29 58		9.33	
543	B. A. C., 2655	6	7 52 5.36	2	2.391	29 53		9.42	
544	Anonymous	7	7 52 15.03	1	2.455	—27 37		9.44	
545	6 Cancri	5.5 ✡	7 54 54.77	2	3.700	+28 11		9.64	
546	B. A. C., 2677	6 ✡	7 57 3.92	2	12.354	82 50		9.82	
547	B. A. C., 2703	7 ✡	7 58 0.43	2	3.562	22 51		9.88	
548	12 Cancri	6 ✡	8 0 52.79	1	3.361	+14 3		10.10	
549	15 Argus	3 ✡	8 1 34.97	2	2.561	—23 54		10.15	
550	ζ^1 Cancri	5.5 ✡	8 4 10.77	1	3.446	+18 4		10.34	
551	ζ^2 Cancri	7 ✡	8 4 11.04	1	3.446	18 4		10.34	
552	B. A. C., 2788	6.5 ✡	8 12 10.68	1	3.506	21 11		10.94	
553	λ Cancri	6 ✡	8 12 12		3.582	24 27 35.38	1	10.95	
554	B. A. C., 2787	6 ✡	8 14 7.31	2	17.356	85 32		11.08	
	Sub Polo		6.54	6					
555	Bessel Zone, 278, 31	9	8 14 47.90	1	3.499	21 01		11.13	
556	Weisse VIII, 415	9 ✡	8 16 32.31	1	3.347	13 57		11.25	
557	Santini, 583	6	8 18 19.36	1	3.121	2 33		11.38	
558	υ^1 Cancri, (2818[1])	7 ✡	8 18 19.93	1	3.585	24 59		11.38	
559	B. A. C., 2818[2]	8 ✡	8 18 20.15	1	3.585	+24 59		11.38	
560	B. A. C., 2827	6 ✡	8 19 1.14	1	2.592	—23 35		11.43	
561	Santini, 588	7.5 ✡	8 21 58.06	1	3.075	+ 0 10		11.64	
562	θ Cancri	5.5 ✡	8 23 36		3.436	18 33 53.64	1	11.76	
563	η Cancri	6 ✡	8 24 36.44	10	3.484	+20 55		11.83	
564	B. A. C., 2883	6 ✡	8 27 23.66	1	2.428	—31 3		12.03	
565	Groombridge, 1452	8 ✡	8 30 18.91	1	9.416	+80 31		12.23	
566	39 Cancri	6 ✡	8 32 2.93	1	3.466	20 30		12.35	
567	40 Cancri	6 ✡	8 32 7.98	1	3.465	20 28		12.36	
568	Gr. C., 773	6 ✡	8 34 42.29	2	9.340	80 33		12.53	
569	δ Cancri	4.5 ✡	8 36 43.45	4	3.422	18 40		12.67	
570	ε Hydræ	4 ✡	8 39 21.60	8	3.197	6 56		12.85	
571	Arg. Z. N., 187, 74, S. P.	8.5 ✡	8 42 18		5.074	63 6 29.43	2	13.04	
572	52 Cancri	7 ✡	8 43 20.26	1	3.372	+16 31		13.11	
573	Anonymous	9	8 46 14.91	1	2.839	—13 8		13.31	
574	B. A. C., 3031	7.5 ✡	8 47 53.57	1	3.333	+14 43		13.41	
575	Lalande, 17662	8.5	8 49 35.36	1	2.837	—13 22		13.52	
576	ι Ursæ Majoris	3.5 ✡	8 49 36.20	2	4.192	+48 35		13.52	
577	α Cancri	4 ✡	8 50 49.59	5	3.288	12 24		13.60	
578	B. A. C., 3078	8 ✡	8 54 25.48	1	3.177	+ 6 12		13.83	
579	B. A. C., 3082	6 ✡	8 55 7.15	1	2.599	—26 7		13.88	
580	κ Cancri	5 ✡	9 0 9.58	1	3.260	+11 14		14.19	
581	B. A. C., 3121	6.5	9 1 54.28	2	2.629	—25 18		14.30	
582	Lacaille, 3690	7.5	9 2 31.65	1	2.631	—25 15		14.34	
583	83 Cancri	6 ✡	9 11 9.69	5	3.369	+18 18		14.86	
584	B. A. C., 3194	7.5 ✡	9 15 25.40	1	3.497	25 47		15.10	
585	B. A. C., 3199, S. P.	5 ✡	9 16 48.52	1	9.241	81 56		15.13	
586	B. A. C., 3206	7 ✡	9 16 52.22	2	3.396	+20 23		15.18	
587	α Hydræ	2 ✡	9 20 42.46	6	2.951	— 8 3		15.40	
588	Weisse IX, 488	8.5	9 23 4.30	1	2.890	—12 7		15.53	
589	Bessel Zone, 345, 44	8.7	9 23 26.69	2	3.466	+25 1		15.56	
590	Weisse IX, 498	9.5	9 23 32.34	1	2.891	—12 7		15.56	
591	h Leonis	6 ✡	9 24 27.01	1	3.225	+10 20		15.61	
592	ψ Argus	4 ✡	9 25 11.53	1	2.374	—39 51		15.65	
593	33 Hydræ	6 ✡	9 27 38.48	1	2.995	— 5 18		15.78	
594	Bessel Zone, 450, 82	7.5	9 32 41.31	1	3.735	+39 35		16.05	
595	o Leonis	4 ✡	9 33 40.40	1	3.220	+10 32		16.11	
596	Bessel Zone, 349, 70	8	9 37 49.07	1	3.480	27 41		16.32	
597	ε Leonis	3 ✡	9 37 53.83	6	3.425	24 25		16.32	
598	Radcliffe, 2396, S. P.	6.2 ✡	9 39 21.90	1	4.821	+66 14 31.78	2	16.40	
599	Weisse IX, 867	9	9 39 57.39	1	2.919	—11 15		16.43	
600	Weisse IX, 868	8.5	9 39 58.82	1	+2.919	—11 17		—16.43	

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				h. m. s.		s.	° ′ ″		″	
601		Anonymous	9	9 40 9.69	1	+2.924	−10 56		−16.44	
602		Anonymous	9	9 41 2.22	1	2.924	−10 58		16.48	
603		Anonymous	9	9 41 20.27	1	3.222	+11 12		16.50	
604	23	Leonis	7.8	9 43 27.13	2	3.255	13 43		16.60	
605		Anonymous	8.5	9 47 2.73	1	3.331	19 27		16.78	
606		Rumker, 3002	8.5	9 47 49.38	1	3.330	19 29		16.81	
607		Weisse IX, 1024	8	9 47 55.23	1	3.210	10 46		16.82	
608		Arg. Z. N., 176, 26, S.P.	9 ✡	9 48 36.15	1	4.701	66 0 13.50	2	16.85	
609		Bessel Zone, 275, 87	9	9 51 41.25	1	3.313	18 46		16.99	
610	π	Leonis	4.5 ✡	9 52 48.74	5	3.180	8.43		17.05	
611		Anonymous	9.5	9 58 16.30	1	3.337	21 13		17.29	
612		Weisse IX, 1259	8 ✡	9 59 5.59	1	3.233	13 28		17.33	
613	α	Leonis	1	10 0 54.73	5	3.221	12 39		17.41	
614		Bessel Zone, 275, 106	7	10 1 35.88	1	3.326	21 1		17.44	
615		B. A. C., 3468	6.5 ✡	10 2 54.15	1	3.584	+38 5		17.49	
616		B. A. C., 3489	6 ✡	10 6 53.39	1	2.759	−26 20		17.66	
617		B. A. C., 3495	5.5 ✡	10 8 39.10	1	10.149	+84 58		17.74	
618		Rumker. 3113	9	10 8 42.10	1	3.209	12 22		17.74	
619		Bessel Zone, 497, 51	9	10 8 45.95	1	3.660	43 20		17.74	
620	γ^1	Leonis	2 ✡	10 12 14.92	3	3.299	20 33		17.88	
621		B. A. C., 3528, S.P.	5.5 ✡	10 13 49.94	1	8.132	83 16		17.94	
622		Weisse X, 234	7.5	10 14 27.69	1	3.192	11 24		17.97	
623		Weisse X, 276	7	10 16 54.37	1	3.188	11 18		18.06	
624		Rumker, 3172	✡	10 17 32.34	1	3.190	11 35		18.08	
625	29	Leonis Minoris	5.5 ✡	10 17 39.71	1	3.493	36 8		18.09	
526	30	Leonis Minoris	4.5	10 17 52.51	1	3.468	34 30		18.10	
627		Anonymous	9	10 18 49.13	1	3.259	+18 8		18.13	
628		B. A. C., 3576	7 ✡	10 20 26.11	1	3.069	− 0 15		18.19	
629		Bessel Zone, 456, 21	7	10 21 9.81	1	3.252	+17 51		18.22	
630		Lalande, 20419	8	10 25 14.43	1	3.002	− 7 28		18.37	
631	ρ	Leonis	4 ✡	10 25 26.21	3	3.167	+10 2		18.37	
632	37	Leonis Minoris	4.5	10 30 49.76	1	3.398	32 42		18.56	
633		Bessel Zone, 499, 114	9	10 32 6.26	2	3.438	36 11		18.60	
634		Bessel Zone, 407, 118	8.5	10 34 26.19	1	3.443	37 15		18.67	
635		Bessel Zone, 499, 117	9	10 34 35.16	1	3.427	36 7		18.68	
636	34	Sextantis	6 ✡	10 35 23.61	1	3.108	4 19		18.70	
637		Bessel Zone, 498, 52	9	10 37 20.72	1	3.464	39 44		18.77	
638	37	Sextantis	6 ✡	10 38 48.21	2	3.130	7 7		18.81	
639		Weisse X, 716	9	10 40 48.52	1	3.173	12 38		18.87	
640	l	Leonis	6 ✡	10 41 53.72	6	3.161	11 17		18.90	
641		Weisse X, 781	7	10 43 46.58	1	3.167	+12 19		18.96	
642	b^3	Hydræ, (3733)	5.5 ✡	10 46 38.78	1	2.924	−19 23		19.04	
643		Weisse X, 879	9	10 48 32.84	1	2.966	−14 31		19.09	
644		Lalande, 21025	8.5	10 49 15.66	1	3.366	+35 56		19.11	
645		Lalande, 21042	9	10 50 11.05	1	3.363	35 56		19.13	
646	d	Leonis	5 ✡	10 53 19.74	4	3.101	4 22		19.21	
647		B. A. C., 3773	7 ✡	10 53 53.55	1	3.077	0 48		19.23	
648	α	Ursæ Majoris	1.5 ✡	10 55 3.33	2	3.790	62 30		19.26	
		Sub Polo		3.22	1					
649	χ	Leonis	4.5 ✡	10 57 47.61	6	3.122	8 6		19.32	
650		Bessel Zone, 499, 147	8	11 2 31.38	1	3.314	36 5		19.43	
651		Bessel Zone, 357, 22	9	11 4 31.79	1	3.283	33 22		19.47	
652		Weisse XI, 61	8	11 5 25.35	2	3.131	10 37		19.49	
653	p^5	Leonis	5.5 ✡	11 6 35.56	2	3.076	0 41		19.51	
654	δ	Leonis	2.5 ✡	11 6 39.40	6	3.192	21 17		19.52	
655		Bessel Zone, 501, 107	9	11 7 40.08	1	3.268	+32 55		19.54	
656	φ	Leonis	5 ✡	11 9 32.75	2	3.057	− 2 53		19.57	
657	δ	Hydræ et Crateris	3.5 ✡	11 12 20.62	5	3.003	14 1		19.62	
658		Weisse XI, 217	9	11 13 30.37	1	3.015	−11 54		19.65	
659		Weisse XI, 221	8	11 13 47.46	1	3.109	+ 7 50		19.65	
660		Anonymous	9	11 13 54.42	1	+3.268	+36 15		−19.65	

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			h. m. s.		s.	° ′ ″		s.	
661	Weisse XI, 233	8	11 14 21.73	2	+3.094	+ 4 59		— 19.66	
662	Weisse XI, 253	8	11 15 29.75	1	3.018	—11 53		19.68	
663	Weisse XI, 258	8.5 ✡	11 15 50.85	1	3.094	+ 4 54		19.69	
664	B. A. C., 3892	6	11 19 2.92	1	3.111	9 26		19.74	
665	τ Leonis	4 ✡	11 20 44.20	2	3.086	3 38		19.76	
666	58 Ursæ Majoris	6 ✡	11 22 55.73	1	3.279	43 56		19.79	
667	λ Draconis	3.5 ✡	11 23 2.66	1	3.679	+70 6		19.80	
668	e Leonis	4.5 ✡	11 23 9.73	2	3.064	— 2 14		19.80	
669	B. A. C., 3920	7 ✡	11 24 50.03	1	3.052	5 42		19.82	
670	Lacaille, 4777	7	11 26 1.40	1	2.932	—35 26		19.84	
671	Bessel Zone, 496, 59	9	11 26 51.91	1	3.153	+22 47		19.85	
672	Weisse XI, 462	7	11 27 14.09	2	3.056	— 4 45		19.85	
673	Weisse XI, 466	8.7	11 27 32.52	2	3.056	— 4 49		19.86	
674	B. A. C., 3940	7 ✡	11 29 22.23	1	3.093	+ 6 53		19.88	
675	υ Leonis	4.5 ✡	11 29 46.88	11	3.072	— 0 3		19.88	
676	Anonymous	7.5	11 31 51.54	1	3.091	+ 6 50		19.91	
677	Anonymous	9.5	11 32 37.75	1	3.057	— 5 19		19.91	
678	Bessel Zone, 500, 130	8	11 32 52.15	2	3.152	+26 56		19.92	
679	Bessel Zone, 503, 11	7	11 36 29.51	2	3.135	+24 45		19.95	
680	Weisse XI, 641	8 ✡	11 36 58.10	1	3.037	—14 41		19.96	
681	Weisse XI, 662	7.5	11 38 12.27	1	3.089	+ 7 49		19.97	
682	Bessel Zone, 359, 32	7.5	11 38 14.28	1	3.166	36 40		19.97	
683	χ Ursæ Majoris, (3981)	4 ✡	11 38 38.64	1	3.213	48 33		19.97	
684	Rumker, 3738	6.5	11 39 45.21	4	3.126	24 30		19.98	
685	93 Leonis	4 ✡	11 40 45.54	2	3.115	21 0		19.99	
686	β Leonis	2.5	11 41 54.89	9	3.101	15 21		19.99	
687	β Virginis	3.5	11 43 24.14	1	3.076	2 33		20.00	
688	Anonymous	8	11 44 32.66	1	3.231	86 57		20.01	
689	B. A. C., 4010	6.7 ✡	11 44 53.81	1	3.142	38 44		20.01	
690	γ Ursæ Majoris	2 ✡	11 46 26.89	3	3.182	+54 28		20.02	
691	B. A. C., 4020	7 ✡	11 46 42.75	1	3.068	— 3 0		20.02	
692	B. A. C., 4021	7 ✡	11 46 53.50	1	3.079	+ 5 39		20.02	
693	Bessel Zone, 358, 29	7.5	11 48 (43.50)	1	3.120	36 7		20.03	
694	Bessel Zone, 358, 30	7.7	11 49 3.60	2	3.119	36 13		20.03	
695	B. A. C., 4050	6 ✡	11 52 54.69	1	3.353	81 38		20.05	
696	B. A. C., 4055	7 ✡	11 54 0.08	1	3.074	4 25		20.05	
697	67 Ursæ Majoris	7	11 54 59.45	1	3.100	43 49		20.05	
698	Anonymous	8	11 55 24.70	1	3.076	8 40		20.05	
699	B. A. C., 4070	6 ✡	11 57 36.62	8	3.295		1	20.06	
	S. P.		35.04	5		+86 21 49.47		20.06	
700	B. A. C., 4080	7 ✡	12 0 4.57	1	3.072	— 5 59		20.06	
701	Bessel Zone, 412, 6	9	12 0 54.13	1	3.070	+24 28		20.06	
702	B. A. C., 4088	7	12 1 7.24	1	3.076	—33 54		20.06	
703	B. A. C., 4095	6.5	12 2 49.25	1	3.083	33 55		20.05	
704	ε Corvi	3 ✡	12 2 55.78	8	3.079	—21 50		20.05	
705	B. A. C., 4100	6.5 ✡	12 3 39.02	1	3.061	+28 5		20.05	
706	Weisse XII, 63	8	12 5 8.53	1	3.069	6 39		20.05	
707	4 Draconis, (4112)	5 ✡	S.P. 12 5 35.51	1	2.913	78 24		20.05	
708	Weisse XII, 91	9	12 6 56.39	3	3.068	5 47		20.05	
709	Weisse XII, 160	9	12 11 0.01	1	3.065	5 52		20.03	
710	Rumker, 3907	8.5	12 12 31.65	1	3.064	6 19		20.03	
711	B. A. C., 4150	6 ✡	S.P. 12 12 42.10	2	1.550	87 13		20.03	
712	η Virginis	3.5 ✡	12 12 44.64	11	3.072	0 7		20.03	
713	Rumker, 3911	7.5	12 12 47.33	3	+3.064	6 27		20.03	
714	B. A. C., 4165	6 ✡	12 14 19.86	1	—0.068	+88 29		20.02	
	Sub Polo		19.68	8					
715	B. A. C., 4171	7 ✡	12 15 57.66	1	+3.083	— 6 31		20.01	
716	B. A. C., 4184	6 ✡	12 18 12.10	1	3.023	+24 42		19.99	
717	Rumker, 3966	✡	12 18 46.12	1	3.063	4 58		19.99	
718	Anonymous	9	12 19 26.10	1	1.426	86 4		19.98	
719	Weisse XII, 359	8.5	12 21 55.56	1	3.057	6 44		19.96	
720	Weisse XII, 360	9 ✡	12 21 57.57	2	+3.055	+ 7 38		— 19.96	

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721	20 Comæ	6.5 ✡	12 22 40.92	3	+3.020	+21 40		−19.96	
722	Weisse XII, 390	9.5	12 24 4.13	2	3.089	− 6 53		19.95	
723	Anonymous		12 24 12.58	1	3.058	+ 5 30		19.94	
724	Weisse XII, 433	9 ✡	12 26 28.68	1	3.062	+ 3 41		19.92	
725	*q* Virginis	5.5 ✡	12 26 33.35	3	3.096	− 8 41		19.92	
726	*β* Corvi	2.5 ✡	12 27 12.34	2	3.137	−22 37		19.92	
727	Anonymous	9	12 27 20.07	2	3.064	+ 3 1		19.92	
728	*κ* Draconis	3.5 ✡	12 27 28.89	1	2.619	70 34		19.91	
	Sub Polo		29.11	2					
729	Weisse XII, 463	8	12 28 7.90	2	3.063	+ 3 2		19.91	
730	*f* Virginis	6 ✡	12 29 34.69	1	3.087	− 5 4		19.89	
731	Weisse XII, 494	7.5	12 30 7.45	1	3.095	− 7 32		19.88	
732	Bessel Zone, 409, 45	8.5	12 30 11.07	2	2.955	+33 46		19.88	
733	Weisse XII, 497	8 ✡	12 30 18.67	1	3.029	13 45		19.88	
734	Weisse XII, 510	7.5	12 31 4.05	1	3.063	2 45		19.87	
735	Weisse XII, 513	6.5	12 31 14.02	3	3.064	2 38		19.87	
736	Weisse XII, 519	8.5	12 31 32.05	1	3.024	14 35		19.87	
737	Anonymous	10	12 31 48.43	1	3.024	14 31		19.86	
738	Weisse XII, 526	9.5	12 31 57.70	2	3.024	14 33		19.86	
739	Weisse XII, 564	9	12 34 23.50	1	3.062	+ 2 46		19.83	
740	γ^1 Virginis	4 ✡	12 34 34.02	2	3.074	− 0 41		19.83	
741	28 Virginis	6 ✡	12 34 43.40	2	3.096	− 6 44		19.83	
742	Weisse XII, 583	9.5	12 35 14.83	1	3.064	+ 2 23		19.82	
743	Weisse XII, 584	8.5	12 35 19.78	1	3.064	2 6		19.82	
744	B. A. C., 4281, S. P.	6 ✡	12 37 15.05	3	0.861	84 24 44.33	3	19.79	
745	Weisse XII, 646	8 ✡	12 38 24.84	1	3.016	+14 11		19.77	
746	Weisse XII, 665	8.5	12 39 34.54	1	3.016	13 44		19.76	
747	B. A. C., 4298, S. P.	6 ✡	12 40 52.31	1	1.505	81 23		19.74	
748	11 Canum Venaticorum	6 ✡	12 42 14.61	1	2.788	49 14		19.72	
749	Bessel Zone, 361, 41	9	12 43 17.36	1	2.988	18 25		19.70	
750	Weisse XII, 736	9	12 43 33.37	2	3.072	0 1		19.69	
751	Weisse XII, 757	7.5	12 44 41.45	3	3.068	+ 0 51		19.68	
752	*ψ* Virginis	5 ✡	12 47 4.51	2	3.114	− 8 47		19.63	
753	B. A. C., 4339, S. P.	5.5 ✡	12 48 0.52	3	0.344	+84 11		19.62	
754	B. A. C., 4342	5.5 ✡	12 48 8.76	3	0.339	84 10		19.62	
755	*δ* Virginis	3 ✡	12 48 33.09	2	3.052	+ 4 10		19.61	
756	Weisse XII, 835	7 ✡	12 49 15.57	1	3.073	− 0 12		19.59	
757	Radcliffe, 2936	5.5 ✡	12 49 53.01	1	2.417	+66 12		19.58	
758	Weisse XII, 878	8	12 51 48.45	1	3.079	− 1 19		19.55	
759	B. A. C., 4363	7 ✡	12 54 22.70	2	3.060	+ 2 17		19.49	
760	Weisse XII, 929	8.5	12 54 25.59	2	2.994	13 55		19.49	
761	Radcliffe, 2948	5.5	12 54 36.72	1	2.316	67 21		19.49	
762	Weisse XII, 933	9	12 54 43.18	2	2.994	13 56		19.49	
763	*ε* Virginis	3 ✡	12 55 12.46	1	3.006	11 43		19.48	
764	Anonymous		12 58 50.36	1	0.013	83 40		19.40	
765	Anonymous	9	13 0 30.27	1	2.991	+13 0		19.36	
766	*g* Virginis	5 ✡	13 0 33.91	1	3.133	− 9 59		19.36	
767	Weisse XII, 1038	9	13 0 35.83	2	2.991	+13 1		19.36	
768	*θ* Virginis	4.5 ✡	13 2 42.18	15	3.102	− 4 47		19.31	
769	Anonymous	9	13 4 39.30	1	2.986	+13 1		19.26	
770	Weisse XIII, 69	7	13 5 34.76	1	2.990	+12 18		19.24	
771	B. A. C., 4433	5 ✡	13 7 21.56	1	2.736	40 54		19.20	
772	Weisse XIII, 104	6.5	13 7 32.10	2	2.989	+12 5		19.19	
773	58 Virginis	6 ✡	13 10 7.15	1	3.142	− 9 48		19.12	
774	61 Virginis	4.5 ✡	13 10 5.14	1	3.201	17 32		19.10	
775	Weisse XIII, 181	9	13 11 42.64	1	3.085	− 1 48		19.08	
776	Weisse XIII, 208	9	13 13 6.75	1	2.993	+10 44		19.04	
777	B. A. C., 4462	7 ✡	13 13 29.45	2	3.031	+ 5 34		19.03	
778	Weisse XIII, 223	8.5 ✡	13 14 13.04	1	3.155	−11 1		19.01	
779	B. A. C., 4479	6 ✡	13 17 32.76	1	2.728	+37 46		18.92	
780	*α* Virginis	1	13 17 49.28	22	+3.154	−10 26		−18.91	

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781	Weisse XIII, 294	8 ✡	13 18 54.67	2	+3.095	— 2 56		—18.88	
782	B. A. C., 4498, S. P.	6 ✡	13 20 23.96	2	—2.749	+85 29		18.83	
783	Bessel Zone, 464, 125	8.5	13 21 52.64	2	+2.824	+27 56		18.79	
784	Anonymous	7	13 23 58.10	1	3.085	— 1 36		18.72	
785	B. A. C., 4519	6 ✡	13 25 11.04	1	2.622	+42 49		18.69	
786	*h* Virginis	6 ✡	13 25 35.87	1	3.153	— 9 27		18.67	
787	Anonymous	8	13 25 44.64	1	3.086	— 1 36		18.67	
788	ζ Virginis	4 ✡	13 27 33.67	9	3.071	+ 0 7		18.61	
789	Weisse XIII, 458	8.5	13 27 41.27	1	3.023	5 38		18.61	
790	Weisse XIII, 461	8.5	13 27 55.32	1	3.009	7 10		18.60	
791	Weisse XIII, 472	8.5	13 28 13.41	1	3.008	7 14		18.59	
792	B. A. C., 4536	5.5 ✡	13 28 32.34	1	+2.680	37 54		18.58	
793	Anonymous	9	13 28 40.13	1	—0.031	80 46		18.57	
794	Anonymous	9	13 28 47.07	1	+3.008	+ 7 15		18.57	
795	Weisse XIII, 501	8.5 ✡	13 30 6.62	1	3.109	— 4 5		18.53	
796	Weisse XIII, 512	7	13 30 32.88	1	3.094	2 31		18.51	
797	B. A. C., 4560	7	13 33 32.48	3	+3.185	—12 4		18.41	
798	Anonymous		13 36 40.45	1	—0.033	+80 0		18.30	
799	Bessel Zone, 462, 49	9	13 37 38.36	2	+2.803	+25 59		18.26	
800	83 Virginis	6 ✡	13 37 56.82	1	3.225	—15 28		18.25	
801	85 Virginis	6 ✡	13 38 2.95	4	3.221	15 4		18.25	
802	86 Virginis	6 ✡	13 38 28.92	1	3.188	11 43		18.23	
803	Weisse XIII, 674	9	13 39 54.21	2	3.194	12 12		18.18	
804	Arg. C. 13158	7 ✡	13 41 16.52	1	3.303	—22 1		18.13	
805	η Ursæ Majoris	2.5 ✡	13 42 1.05	4	2.386	+50 1		18.10	
806	89 Virginis	5.5 ✡	13 42 16.18	2	3.253	—17 26		18.09	
807	Lalande, 25472	8	13 42 42.74	1	2.877	+18 35		18.08	
808	Bessel Zone, 466, 45	8	13 45 46.27	1	2.633	36 24		17.96	
809	Bessel Zone, 412, 139	8	13 46 17.48	1	2.842	21 1		17.94	
810	η Bootis	3 ✡	13 48 1.04	7	2.862	19 6		17.87	
811	Rumker, 4529	6 ✡	13 51 1.49	1	2.772	25 45		17.75	
812	Anonymous	8.5	13 53 50.22	2	0.320	76 58		17.63	
813	Rumker, 4551	8	13 54 30.77	1	2.804	22 43		17.60	
814	τ Virginis	4.5	13 54 31.37	12	3.047	+ 2 13		17.60	
815	94 Virginis	6 ✡	13 58 53.16	1	3.168	— 8 13		17.42	
816	Anonymous	8	13 59 7.90	1	3.228	13 15		17.41	
817	B. A. C., 4691	7 ✡	13 59 36.66	3	3.257	—15 31		17.37	
818	Anonymous	9	14 1 56.18	1	1.532	+66 14		17.28	
819	Weisse XIV, 31	8 ✡	14 3 7.93	2	3.143	— 5 54		17.23	
820	B. A. C., 4700	5.5 ✡	14 3 11.97	1	3.264	15 38		17.23	
821	Arg. Z. S., 206, 32	8	14 3 34.67	1	+3.274	—16 22		17.21	
822	Groombridge, 2099	7	14 4 27.23	1	—8.002	+86 26		17.17	
	S. P.		26.77	1					
823	B. A. C., 4719	6.5 ✡	14 6 55.29	3	+3.456	—28 37		17.06	
824	B. A. C., 4722	6 ✡	14 7 41.47	1	3.296	—17 33		17.02	
825	α Bootis	1	14 9 16.52	8	2.813	+19 55		16.95	
826	Anonymous	9	14 9 47.28	2	3.129	— 4 33		16.92	
827	Weisse XIV, 171	9	14 10 32.46	2	3.128	4 29		16.89	
828	Weisse XIV, 174	9	14 10 38.52	2	3.129	— 4 30		16.89	
829	ι Bootis	4 ✡	14 11 12.32	1	2.144	+52 1		16.86	
830	Lalande, 26172	7.5 ✡	14 11 41.80	1	3.307	—17 53		16.84	
831	Arg. Z. S., 301, 20	8	14 12 38.64	1	3.396	23 52		16.79	
832	Lalande, 26210	8	14 13 4.36	1	3.320	18 41		16.77	
833	B. A. C., 4767	6 ✡	14 16 49.81	1	3.409	—24 10		16.59	
834	B. A. C., 4769	7 ✡	14 17 2.48	1	2.987	+ 6 27		16.58	
835	B. A. C., 4773	5.5	14 17 13.36	2	2.987	6 28		16.57	
836	Anonymous	9	14 17 29.83	1	2.986	+ 6 28		16.55	
837	Anonymous	9	14 22 43.79	2	3.115	— 3 9		16.29	
838	Weisse XIV, 422	9	14 23 36.69	1	3.116	3 11		16.25	
839	Weisse XIV, 423	8	14 23 41.53	4	3.143	— 5 11		16.24	
840	Anonymous		14 24 39.44	2	+2.159	+49 10		—16.19	

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841	ρ Bootis	4 ✡	14 25 47.61	3	+2.595	+30 59		−16.13	
842	B. A. C., 4814	6 ✡	14 26 58.31	1	3.360	−19 49		16.07	
843	Anonymous	9	14 27 4.01	1	2.086	+50 56		16.07	
844	Weisse XIV, 503	8	14 28 5.79	3	3.146	− 5 13		16.01	
845	σ Bootis	5 ✡	14 28 34.94	4	2.599	+30 21		15.99	
846	Weisse XIV, 519	9 ✡	14 28 53.34	1	3.117	− 3 10		15.97	
847	Weisse XIV, 540	8 ✡	14 29 50.88	1	3.119	3 17		15.92	
848	Weisse XIV, 606	8.5	14 33 36.51	1	3.157	5 51		15.72	
849	Weisse XIV, 608	8.5	14 33 45.44	1	3.230	10 46		15.71	
850	Arg. Z S., 301, 47	7.2	14 34 50.49	2	3.441	23 48		15.65	
851	Arg. Z. S., 301, 48	8.5	14 35 26.56	2	3.441	23 46		15.62	
852	Weisse XIV, 668	8	14 37 0.77	6	3.158	− 5 48		15.53	
853	108 Virginis, (4869)	6.5 ✡	14 38 22.47	3	3.052	+ 1 19		15.46	
854	ε Bootis	3 ✡	14 38 52.30	2	2.624	+27 40		15.43	
855	Weisse XIV, 759	8.5	14 41 16.12	3	3.171	− 6 31		15.29	
856	Weisse XIV, 787	8.5	14 42 38.71	1	3.172	6 35		15.21	
857	α^1 Libræ, (4894)	6 ✡	14 42 56.86	1	3.313	15 25		15.20	
858	α^2 Libræ, (4895)	3 ✡	14 43 8.29	13	3.313	−15 27		15.19	
859	B. A. C., 4902	6 ✡	14 43 56.63	1	2.582	+29 12		15.14	
860	Lacaille, 6140	7 ✡	14 46 3.33	1	3.539	−27 47		15.02	
861	Weisse XIV, 872	8.5	14 46 35.93	2	3.070	+ 0 9		14.99	
862	Weisse XIV, 874	8	14 46 39.06	2	3.069	0 10		14.98	
863	Anonymous		14 51 0.97	1	+ 2.197	43 58		14.73	
864	β Ursæ Minoris	3 ✡	14 51 9.12	12	− 0.254	74 44		14.72	
	S. P.		9.14	5					
865	Anonymous	8.5	14 52 1.19	1	+ 2.194	43 54		14.67	
866	Bessel Zone, 473, 106	8.2	14 52 57.85	4	2.189	43 58		14.61	
867	Bessel Zone, 473, 108	8.5	14 54 1.68	1	2.186	+43 54		14.55	
868	20 Libræ	3.5 ✡	14 55 52.98	7	3.500	−24 44		14.43	
869	Σ Cat. Gen., 1683	7.7 ✡	14 57 9.59	1	2.973	+ 6 3		14.36	
870	ψ Bootis	5 ✡	14 58 26.76	1	2.583	27 30		14.28	
871	Weisse XIV, 1129	8	15 0 15.25	3	3.063	0 34		14.17	
872	Weisse XIV, 1131	9	15 0 19.56	2	3.065	0 27		14.16	
873	Weisse XIV, 1142	8.3	15 0 50.85	3	3.064	+ 0 29		14.13	
874	Weisse XIV, 1150	7	15 1 19.50	4	3.300	−13 28		14.10	
875	Anonymous	8.5	15 1 19.53	1	3.065	+ 0 25		14.10	
876	Weisse XV, 2	8.5 ✡	15 1 55.55	1	3.106	− 2 2		14.06	
877	ι^1 Libræ	5.5 ✡	15 4 14.77	7	3.408	19 15		13.92	
878	ι^2 Libræ	6.5 ✡	15 5 20.99	3	3.407	19 7		13.85	
879	Weisse XV, 79	7.5 ✡	15 6 3.28	1	3.305	−13 30		13.80	
880	Bessel Zone, 419, 3	8.5	15 6 32.82	1	2.065	+46 0		13.77	
881	3 Serpentis	6 ✡	15 8 13.80	1	2.978	+ 5 28		13.66	
882	β Libræ	2.5 ✡	15 9 28.60	14	3.225	− 8 52		13.58	
883	Arg. Z. N., 116, 71	7.5 ✡	15 12 9.00	2	0.686	+67 23		13.41	
884	5 Serpentis	6	15 12 10.06	1	3.032	+ 2 18		13.41	
885	Weisse XV, 210	9	15 12 37.10	2	3.310	−13 27		13.38	
886	Weisse XV, 221	9	15 13 20.88	1	3.308	13 19		13.33	
887	Weisse XV, 249	8	15 14 49.45	1	3.329	−14 22		13.24	
888	B. A. C., 5064	7.5	15 15 5.98	1	1.842	+50 43		13.22	
889	Weisse XV, 254	9	15 15 7.03	1	3.306	−13 5		13.22	
890	B. A. C, 5066	7 ✡	15 15 38.94	2	3.581	−26 48		13.18	
891	B. A. C., 5091	6 ✡	15 20 18.70	1	0.984	+63 51		12.87	
892	ζ^1 Libræ	4 ✡	15 20 21.73	1	3.370	−16 13		12.87	
893	10 Serpentis	5.5 ✡	15 21 33.98	1	3.030	+ 2 20		12.79	
894	ι Draconis	3 ✡	15 21 49.04	1	+ 1.325	59 27		12.77	
895	B. A. C, 5140	7.5	15 23 59.86	3	−23.519	+87 46		12.62	
	S. P.		59.17	2					
896	B. A. C., 5117	7 ✡	15 25 36.24	3	+ 3.553	−24 43		12 51	
897	γ Libræ	4.5 ✡	15 27 41.96	2	3.341	14 19		12 37	
898	39 Libræ	4 ✡	15 28 31.96	2	3.625	−27 40		12 31	
899	α Corona Borealis	2.5 ✡	15 28 45.57	13	2.530	+27 11		12 29	
900	μ Corona Borealis	5 ✡	15 30 6.49	1	+ 2.198	+39 29		−12 20	

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901	Lalande, 28453	7	15 30 44.11	1	+3.401	—17 12		—12.16	
902	41 Libræ	6 ✡	15 30 51.24	1	3.435	18 50		12.15	
903	42 Libræ	5.5 ✡	15 32 0.64	1	3.533	23 21		12.07	
904	Weisse XV, 620	8.5	15 32 58.48	3	3.107	1 52		12.00	
905	B. A. C., 5184	7 ✡	15 34 54.10	1	3.372	15 34		11.86	
906	Anonymous	10	15 35 6.52	1	3.407	17 15		11.85	
907	Lalande, 28617	7.2	15 36 1.01	4	3.391	—16 25		11.78	
908	Anonymous	7	15 37 5.00	1	0.607	+66 14		11.71	
909	α Serpentis	2.5 ✡	15 37 22.38	14	2.941	+ 6 52		11.69	
910	Lalande, 28697	7	15 37 54.21	1	3.395	—16 31		11.65	
911	Lalande, 28726	8 ✡	15 39 19.82	2	3.420	17 39		11.55	
912	B. A. C, 5215	7 ✡	15 39 48.17	1	3.663	28 21		11.52	
913	Lalande, 28766	8 ✡	15 41 4.25	1	3.435	18 16		11.43	
914	B. A. C., 5240	6 ✡	15 43 34.45	1	3.697	29 27		11.25	
915	Weisse XV, 845	9	15 44 7.61	1	3.353	14 13		11.21	
916	Weisse XV, 848	8 ✡	15 44 17.89	1	3.220	— 7 37		11.20	
917	Arg. Z. N., 116, 120	8.5 ✡	15 44 49.16	1	0.542	+66 18		11.16	
918	λ Libræ	4 ✡	15 45 12.61	1	3.471	—19 44		11.13	
919	Arg Z N., 116, 121	8 ✡	15 45 17.68	1	0.538	+66 18		11.12	
920	Weisse XV, 864	8 ✡	15 45 26.55	1	3.356	—14 18		11.11	
921	B. A. C., 5254	6 ✡	15 45 36.30	1	3.557	23 33		11.10	
922	θ Libræ	4.5 ✡	15 45 51.42	1	3.398	16 19		11.08	
923	Anonymous	8	15 46 6.51	1	3.120	2 28		11.06	
924	47 Libræ	7 ✡	15 46 55.09	1	3.456	18 58		11.00	
925	B. A. C, 5266	7 ✡	15 47 12.61	1	3.625	26 19		10.98	
926	Lacaille, 6590	6.5 ✡	15 48 0.59	1	3.872	35 31		10.92	
927	ρ Scorpii	4 ✡	15 48 14.74	1	3.689	28 48		10.91	
928	B. A. C., 5278	6.5	15 49 0.44	1	+3.505	—21 4		10.85	
929	ζ Ursæ Minoris	4 ✡	15 49 8.23	5	—2.324	+78 13		10.84	
	S. P.		8.22	2					
930	Weisse XV, 939	9	15 49 44.78	1	+3.123	— 2 35		10.79	
931	π Scorpii	3.5 ✡	15 50 23.27	1	3.615	25 42		10.74	
932	B. A. C., 5294	7 ✡	15 50 56.40	1	3.638	26 36		10.71	
933	B. A. C., 5299	6 ✡	15 51 6.29	1	3.745	30 46		10.69	
934	Anonymous	9.5	15 51 9.38	1	3.289	10 52		10.69	
935	δ Scorpii	3 ✡	15 52 3.59	2	3.535	22 13		10.62	
936	B. A. C., 5314	6 ✡	15 54 53.18	1	3.616	25 28		10.41	
937	Lacaille, 6657	7 ✡	15 55 22.98	1	3.949	37 28		10.38	
938	51 Libræ	4.5 ✡	15 56 40.29	1	3.295	10 59		10.28	
939	Anonymous		15 56 41.81	1	3.309	11 39		10.28	
940	β^1 Scorpii	2 ✡	15 57 18.05	13	3.477	19 25		10.23	
941	Weisse XV, 1092	9	15 58 2.48	2	3.132	2 58		10.18	
942	Anonymous	9	15 58 48.89	1	3.320	12 8		10.12	
943	Arg. Z. S., 213, 5	9	15 59 2.06	2	3.531	21 41		10.10	
944	B. A. C., 5345	7 ✡	15 59 27.83	1	+3.589	—24 5		10.07	
945	Anonymous		15 59 32.23	1	—0.030	+69 33		10.06	
946	Anonymous		15 59 54.08	1	—0.030	+69 33		10.04	
947	Anonymous	10	16 2 24.67	1	+3.525	—21 15		9.85	
948	ϵ^2 Scorpii, (5381)	5 ✡	16 3 41.00	1	3.682	27 33		9.75	
949	ν Scorpii	4	16 3 51.70	2	3.477	—19 6		9.74	
950	Arg. Z. N., 123, 2	7.7	16 4 46.42	2	+0.553	+65 4		9.67	
951	Groombridge, 2319	8	16 5 20.40	1	—0.266	70 38		9.62	
952	Anonymous	9	16 5 29.84	1	—0.267	+70 38		9.61	
953	Anonymous	7	16 6 15.23	3	+3.517	—20 43		9.55	
954	B. A. C., 5408	6.5 *	16 6 34.75	1	3.458	18 10		9.52	
955	δ Ophiuchi	3 ✡	16 7 0.62	8	3.141	3 20		9.49	
956	Anonymous	9	16 7 18.93	2	3.342	12 53		9.47	
957	Anonymous	8.5	16 7 19.42	1	3.616	24 47		9.47	
958	Anonymous	7.5	16 10 0.72	1	3.347	13 2		9.26	
959	Lacaille, 6781	6.5	16 10 8.40	2	3.907	35 9		9.25	
960	Anonymous		16 10 10.15	1	+3.348	—13 7		— 9.25	

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961	ε Ophiuchi	3 ✡	16 10 54.88	1	+3.162	— 4 21		—9.20	
962	B. A. C., 5441	7 ✡	16 11 48.89	1	3.737	29 10		9.12	
963	σ Scorpii	4 ✡	16 12 41.04	4	3.635	25 15		9.05	
964	Arg. Z. S., 297, 84	6	16 14 51.86	1	3.431	16 41		8.89	
965	Lacaille, 6818	7.5	16 15 22.24	4	+3.908	—34 51		8.84	
966	Anonymous	8.5	16 15 41.88	3	—0.446	+71 9		8.82	
967	Anonymous	8.5	16 15 51.05	1	—0.464	+71 14		8.80	
968	ψ Ophiuchi	5 ✡	16 15 54.80	1	+3.502	—19 42		8.80	
969	υ Ophiuchi	5 ✡	16 20 13.94	1	3.243	8 3		8.46	
970	α Scorpii	1	16 20 49.71	19	3.667	—26 7		8.41	
971	22 Scorpii	6 ✡	16 21 42.30	1	3.634	—24 48		8.34	
972	B. A. C., 5529	8	16 25 12.30	1	2.818	+11 44		8.06	
973	Anonymous	8	16 25 53.71	1	2.247	+33 56		8.01	
974	Anonymous	8	16 26 1.28	1	3.160	— 4 6		8.00	
975	Lacaille, 6888	7 ✡	16 26 52.28	1	+4.104	—40 1		7.93	
976	Groombridge, 2356	7 ✡	16 26 52.52	1	—0.641	+71 42		7.93	
977	Lacaille, 6891	7 ✡	16 27 8.04	2	+3.898	—33 55		7.90	
978	τ Scorpii	3.5 ✡	16 27 10.27	2	3.723	27 55		7.90	
979	Anonymous	9.5	16 27 45.24	3	3.161	— 4 8		7.86	
980	σ Herculis	4 ✡	16 29 35.36	1	1.932	+42 44		7.71	
981	B. A. C., 5556	7 ✡	16 30 26.35	1	3.775	—29 38		7.63	
982	Lacaille, 6922	7 ✡	16 31 6.43	1	3.890	33 28		7.59	
983	Lacaille, 6923	7 ✡	16 31 24.65	1	4.001	36 53		7.56	
984	Anonymous	8	16 31 36.79	1	3.677	26 3		7.54	
985	Lacaille, 6931	7 ✡	16 32 40.83	1	3.864	32 33		7.46	
986	Anonymous	7.5	16 32 48.34	1	3.874	—32 52		7.45	
987	Radcliffe, 3588	6	16 34 43.41	2	1.631	+49 9		7.29	
988	42 Herculis	5 ✡	16 34 56.86	2	1.628	+49 12		7.27	
989	B. A. C., 5600	7 ✡	16 35 36.38	1	3.713	—27 11		7.22	
990	ζ Herculis	3 ✡	16 36 0.43	3	2.296	+31 51		7.19	
991	B. A. C., 5603	6.5 ✡	16 36 14.93	1	3.743	—28 15		7.17	
992	Lacaille, 6965	6.5 ✡	16 36 27.37	1	3.901	33 35		7.15	
993	Lacaille, 6976	7	16 37 37.36	1	3.875	—32 41		7.06	
994	Anonymous	8.9	16 38 3.33	1	0.655	+62 36		7.02	
995	η Herculis	3 ✡	16 38 5.64	1	2.051	+39 11		7.00	
996	B. A. C., 5622	6.5 ✡	16 39 27.76	1	3.825	—30 57		6.90	
997	Arg. Z. N., 125, 9	7	16 39 33.18	2	0.653	+62 34		6.90	
998	g Draconis	5 ✡	16 39 57.33	2	0.396	+64 51		6.86	
999	Lacaille, 6987	6.5 ✡	16 40 10.13	1	3.912	—33 46		6.85	
1000	18 Ophiuchi	6 ✡	16 41 13.26	2	3.643	24 23		6.76	
1001	20 Ophiuchi	5 ✡	16 42 5.47	1	3.306	10 32		6.69	
1002	Lacaille, 7023	6.5	16 44 1.29	2	3.896	33 5		6.53	
1003	Lalande, 30671	8	16 45 4.52	1	3.181	4 55		6.44	
1004	B. A. C., 5678	7	16 46 9.87	1	3.839	31 10		6.35	
1005	B. A. C., 5684	6.5 ✡	16 46 52.95	1	3.842	31 15		6.29	
1006	B. A. C., 5687	7 ✡	16 47 9.18	1	3.673	25 19		6.27	
1007	Arg. Z. S., 388, 83	7.5	16 50 42.03	1	3.721	—26 58		5.97	
1008	κ Ophiuchi	4 ✡	16 51 2.53	7	2.856	+ 9 36		5.94	
1009	Anonymous		16 54 16.88	1	3.862	—31 38		5.67	
1010	Arg. Z. N., 125, 32	8.5 ✡	16 55 21.63	1	0.844	+60 2		5.58	
1011	B. A. C., 5756	6.5	16 57 34.74	1	+3.814	—29 57		5.39	
1012	B. A. C., 5769	6 ✡	16 59 5.10	2	—1.239	+73 20		5.27	
1013	ε Ursæ Minoris	4 ✡	17 0 26.93	8	6.438	82 16		5.15	
1014	Groombridge, 2420	8	17 4 16.36	1	—1.310	+73 30		4.83	
1015	A^1 Ophiuchi	7	17 6 44.44	2	+3.717	—26 23		4.62	
1016	α^1 Herculis	3.5 ✡	17 8 15.81	6	2.734	+14 33		4.49	
1017	B. A. C., 5824	6.5 ✡	17 9 13.44	1	3.900	—32 24		4.41	
1018	B. A. C., 5829	7	17 9 28.44	2	3.657	24 8		4.39	
1019	39 Ophiuchi	5.5 ✡	17 9 28.48	3	3.657	24 8		4.39	
1020	B. A. C., 5833	6.5 ✡	17 10 14.99	1	+3.863	—31 12		—4.32	

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1021	θ Ophiuchi	3.5 ✡	17 13 24.80	12	+3.678	−24 51		−4.05	
1022	B. A. C., 5858	7 ✡	17 14 33.50	1	3.682	24 58		3.95	
1023	Weisse XVII, 254	8.2	17 15 11.94	3	3.214	6 11		3.89	
1024	b Ophiuchi	5 ✡	17 17 49.36	1	3.658	24 2		3.67	
1025	d Ophiuchi	4 ✡	17 18 24.97	1	3.823	29 44		3.62	
1026	Lacaille, 7312	6.5 ✡	17 20 52.19	1	3.948	33 37		3.41	
1027	Arg. C., 16847	9	17 21 31.73	1	3.492	17 41		3.35	
1028	Arg. C., 16854	8	17 21 49.09	1	3.493	17 41		3.32	
1029	Weisse XVII, 409	6.5	17 22 18.26	2	3.210	5 58		3.28	
1030	c^2 Ophiuchi	5 ✡	17 22 52.53	2	3.655	23 51		3.24	
1031	B. A. C., 5924	7 ✡	17 25 33.48	1	3.891	−31 46		3.00	
1032	α Ophiuchi	2 ✡	17 28 26.14	10	2.774	+12 40		2.75	
1033	Lalande, 32045	8.5	17 29 18.24	1	3.687	−24 53		2.68	
1034	B. A. C., 5946	7 ✡	17 29 23.04	1	3.776	−27 58		2.67	
1035	ν^1 Draconis	5 ✡	17 29 25.31	1	1.160	+55 17		2.67	
1036	ν^2 Draconis	5 ✡	17 29 30.66	1	1.160	55 16		2.66	
1037	Anonymous	9	17 33 3.77	1	2.606	+19 21		2.35	
1038	B. A. C., 5983	7	17 34 31.59	2	3.841	−30 4		2.22	
1039	ι Herculis	4 ✡	17 35 30.88	1	1.691	+46 5		2.14	
1040	B. A. C., 6015	6.5	17 39 42.69	1	3.748	−26 55		1.77	
1041	B. A. C., 6016	5.5	17 40 4.91	1	3.893	−31 39		1.74	
1042	γ Ophiuchi	4 ✡	17 40 52.42	1	3.008	+ 2 46		1.67	
1043	μ Herculis	4 ✡	17 40 58.77	2	2.369	+27 48		1.66	
1044	B. A. C., 6023	7 ✡	17 41 23.88	1	3.670	−24 10		1.63	
1045	Weisse XVII, 834	8	17 42 33.02	1	3.358	12 7		1.56	
1046	B. A. C., 6032	7 ✡	17 43 (13.16)	1	3.881	31 15		1.47	
1047	Lalande, 32559	8.5	17 43 14.46	1	3.715	25 44		1.47	
1048	Weisse XVII, 846	9	17 43 14.78	1	3.402	13 55		1.46	
1049	Weisse XVII, 857	9.5	17 43 38.35	1	3.403	13 56		1.43	
1050	B. A. C., 6044	6.5	17 44 47.49	1	3.759	−27 15		1.33	
1051	30 Draconis	5.5	17 45 43.88	2	1.435	+50 49		1.25	
1052	Anonymous	7	17 46 27.42	1	3.903	−31 55		1.18	
1053	Anonymous	8	17 47 8.95	1	3.903	31 54		1.12	
1054	Anonymous	7	17 47 21.31	1	3.905	31 58		1.11	
1055	B. A. C., 6063	7	17 47 51.48	2	3.783	28 2		1.06	
1056	B. A. C., 6072	6	17 49 46.22	1	3.804	28 44		0.89	
1057	Anonymous	8	17 51 50.16	1	3.803	−28 40		0.71	
1058	γ Draconis	2	17 53 21.25	1	1.391	+51 30		0.58	
1059	Arg. C., 17510	7	17 54 4.08	1	3.674	−24 15		0.52	
1060	Arg. C., 17512	9 ✡	17 54 5.23	1	3.674	24 14		0.52	
1061	7 Sagittarii	5.5	17 54 16.44	1	3.674	24 17		0.50	
1062	B. A. C., 6103	5	17 55 24.65	1	4.040	35 54		0.49	
1063	γ^1 Sagittarii	4	17 56 4.63	3	3.831	29 35		0.34	
1064	B. A. C., 6120	6.5	17 57 54.40	1	3.794	28 22		− 0.18	
1065	B. A. C., 6132	7 ✡	18 0 14.60	3	3.709	25 29		+ 0.02	
1066	Anonymous	9	18 1 58.31	1	3.486	−17 13		0.16	
1067	o Herculis	4 ✡	18 2 4.72	2	2.339	+28 45		0.18	
1068	Anonymous	9	18 2 37.29	1	3.487	−17 14		0.23	
1069	B. A. C., 6161	6 ✡	18 3 10.68	2	3.659	23 43		0.28	
1070	μ^1 Sagittarii	3.5 ✡	18 5 23.39	13	3.587	21 5		0.47	
1071	Anonymous	9	18 6 29.20	2	3.491	17 24		0.57	
1072	Anonymous	9	18 9 4.29	2	3.657	23 38		0.80	
1073	Lalande, 33684	8.5	18 11 23.89	1	3.649	23 23		1.00	
1074	Lalande, 33694	7.5	18 11 39.93	1	3.501	17 49		1.02	
1075	δ Sagittarii	3.5 ✡	18 12 1.82	2	3.839	29 53		1.05	
1076	B. A. C., 6222	7	18 13 33.64	2	3.638	22 59		1.19	
1077	ε Sagittarii	3 ✡	18 14 52.65	1	3.987	−34 27		1.30	
1078	B. A. C., 6241	5.5 ✡	18 16 18.40	1	+ 2.500	+23 13		1.42	
1079	δ Ursæ Minoris	3 ✡	18 17 30.49	10	−19.381	86 36		1.53	
	S. P.		30.04	15					
1080	B. A. C., 6258	6 ✡	18 18 12.19	1	+1.412	+51 14		+ 1.59	

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1081	Lalande, 33966	8	18 18 15.13	2	+3.509	−18 10		+ 1.59	
1082	λ Sagittarii	4 ✡	18 19 19.74	2	3.707	25 30		1.69	
1083	B. A. C., 6266	7	18 19 37.40	1	3.640	23 5		1.71	
1084	Anonymous	9	18 21 13.80	2	3.631	22 47		1.85	
1085	B. A. C., 6293	7.2	18 23 11.55	2	3.513	18 21		2.01	
1086	Lalande, 34229	8.5	18 24 18.73	2	3.616	22 14		2.12	
1087	Lalande, 34354	7.5	18 27 24.02	1	3.521	18 40		2.39	
1088	B. A. C., 6327	7	18 28 12.00	1	3.796	28 37		2.46	
1089	B. A. C., 6336	6.5	18 29 31.35	1	3.587	−21 31		2.58	
1090	B. A. C., 6341	6 ✡	18 29 40.64	2	2.496	+23 30		2.59	
1091	Anonymous	8.5	18 30 29.03	1	3.527	−18 56		2.66	
1092	α Lyræ	1	18 32 11.76	11	2.013	+38 39		2.81	
1093	φ Sagittarii	4.5 ✡	18 36 54.43	3	3.748	−27 8		3.21	
1094	29 Sagittarii	6 ✡	18 41 21.51	1	3.563	20 29		3.60	
1095	Anonymous		18 42 9.05	1	4.372	−44 41		3.67	
1096	B. A. C., 6428	5.5 ✡	18 44 34.51	2	1.584	+48 36		3.88	
1097	β^1 Lyræ	3 ✡	18 44 54.56	13	2.214	+33 12		3.90	
1098	σ Sagittarii	3 ✡	18 46 34.86	8	3.724	−26 28		4 05	
1099	Rumker, 6881	8	18 50 41.77	2	2.566	+21 12		4.40	
1100	Lacaille, 7953	7	18 51 49.96	1	3.932	−33 26		4.50	
1101	Weisse XVIII, 1344	9 ✡	18 53 30.26	1	3.414	14 43		4.64	
1102	ζ Sagittarii	3.5 ✡	18 53 42.03	1	3.825	30 5		4.66	
1103	Lalande, 35468	8	18 54 0.33	2	3.471	17 3		4.68	
1104	B. A. C., 6499	6	18 55 25.41	1	+3.860	−31 15		4.80	
1105	υ Draconis	5 ✡	18 56 6		−0.719	+71 6 32.52	1	4.86	
1106	ο Sagittarii	4.5 ✡	18 56 17.50	1	+3.595	−21 57		4.88	
1107	Bessel Zone, 302, 3	8.5	18 58 9.27	1	2.575	+21 1		5.03	
1108	ζ Aquilæ	3 ✡	18 58 58.44	12	2.758	+13 40		5.10	
1109	Anonymous	8	18 59 31.48	1	3.372	−13 4		5.15	
1110	Lacaille, 7998	7.5	18 59 33.22	2	3.944	34 0		5.15	
1111	B. A. C., 6537	7 ✡	19 0 10.80	1	3.843	30 51		5.21	
1112	Weisse XVIII, 1547	7.5	19 0 34.14	2	3.374	13 10		5.24	
1113	π Sagittarii	4.5 ✡	19 1 26.10	3	3.573	21 14		5.31	
1114	B. A. C., 6550	7	19 1 32.64	1	3.542	20 1		5.32	
1115	Lacaille, 8028	7	19 3 32.47	2	3.942	34 5		5.49	
1116	Anonymous	7	19 3 33.18	2	3.942	34 5		5.49	
1117	B. A. C., 6565	7 ✡	19 5 15.19	1	3.729	−27 6		5.63	
1118	B. A. C., 6574	6 ✡	19 6 36		2.572	+21 19 17.14	3	5.75	
1119	Lacaille, 8045	7	19 6 37.69	2	3.929	−33 47		5.75	
1120	Lacaille, 8060	7	19 9 14.56	1	3.914	33 25		5.97	
1121	Anonymous	7	19 9 59.00	1	3.913	−33 25		6.03	
1122	Anonymous	6.7	19 10 34.48	2	2.307	+30 59		6.08	
1123	ω Aquilæ	5 ✡	19 11 14.63	13	2.816	+11 21		6.13	
1124	B. A. C., 6594	7 ✡	19 11 24		3.869	−32 4 17.93	2	6.15	
1125	θ Lyræ	5 ✡	19 11 30.34	1	2.082	+37 53		6.16	
1126	Anonymous	8.5	19 11 50.26	1	1.717	+46 49		6.18	
1127	B. A. C., 6609	7 ✡	19 12 48		3.801	−29 51 46.75	1	6.26	
1128	B. A. C., 6611	7 ✡	19 13 6.73	1	3.703	26 25		6.29	
1129	B. A. C., 6613	7 ✡	19 13 6		3.799	29 46 53.17	1	6.29	
1130	Weisse XIX, 315	8	19 13 39.85	1	3.305	10 25 3.68	1	6.34	
1131	υ Sagittarii	5.5 ✡	19 13 42.40	1	3.441	16 13		6.34	
1132	Gr. C., 1719		19 14 23.01	1	3.556	20 54		6.40	
1133	Lacaille, 8090	7	19 14 35.87	1	3.967	35 14		6.41	
1134	Lacaille, 8092	7	19 14 53.78	1	3.920	33 49		6.44	
1135	B. A. C., 6627	7 ✡	19 15 42		3.834	31 3 54.80	1	6.50	
1136	χ^1 Sagittarii	5.5 ✡	19 16 45.07	1	3.655	24 47		6.59	
1137	Anonymous	9	19 16 53.92	1	3.515	−19 20		6.60	
1138	2 Sagittæ, (6642)	6 ✡	19 18 4.69	1	2.695	+16 40		6.70	
1139	B. A. C., 6639	6	19 18 5.29	1	3.800	−30 1		6.70	
1140	δ Aquilæ	3.5 ✡	19 18 26.28	15	+3.010	+ 2 50		+ 6.73	

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1141	3 Sagittæ, (6647)	6.5 ✡	19 18 27.58	1	+2.695	+16 41		+ 6.73	
1142	2 Cygni	5.5 ✡	19 18 36.22	1	2.364	29 21		6.74	
1143	4 Vulpeculæ	6 ✡	19 19 19.87	2	2.626	+19 32		6.80	
1144	B. A. C., 6665	7	19 20 45.67	1	3.828	—31 4 15.61	1	6.92	
1145	Lacaille, 8120	6.5	19 21 13.42	2	3.867	32 22		6.96	
1146	Anonymous	9	19 23 14.70	1	3.544	20 42		7.12	
1147	Arg. Z. S., 241, 24	8	19 23 19.15	1	3.751	28 30		7.13	
1148	e Aquilæ	6 ✡	19 23 20.34	1	3.139	3 5		7.13	
1149	B. A. C., 6680	7 ✡	19 23 33.55	1	3.827	31 10		7.15	
1150	B. A. C., 6684	6.5	19 24 10.56	2	3.811	30 39		7.20	
1151	Arg. C., 19685	9	19 24 23.37	1	3.717	27 25		7.22	
1152	Lacaille, 8143	7	19 24 33.49	1	3.929	34 30		7.23	
1153	Arg. C., 19694–5	9	19 25 17.14	1	3.716	27 27		7.29	
1154	Arg. C., 19708	9	19 25 45.53	1	3.715	27 27		7.33	
1155	Arg. C., 19713	9	19 25 53.47	1	3.715	27 27		7.34	
1156	Anonymous	8.5	19 25 57.11	2	3.522	19 53		7.36	
1157	B. A. C., 6694	6.5	19 26 6.66	1	3.630	24 9		7.37	
1158	B. A. C., 6693	7 ✡	19 26 6		3.846	—31 54 25.59	2	7.37	
1159	μ Aquilæ	4.5 ✡	19 27 14.87	1	2.918	+ 7 5		7.45	
1160	Lacaille, 8159	6.5	19 27 34.54	1	3.878	—33 0		7.48	
1161	h^2 Sagittarii	4.5 ✡	19 28 10.98	9	3.655	—25 11		7.53	
1162	9 Vulpeculæ	5.5 ✡	19 28 25.88	2	2.634	+19 28		7.55	
1163	Lacaille, 8169	6.5	19 28 57.90	1	3.883	—33 14		7.59	
1164	Arg. Z. S., 235, 40	9	19 29 7.38	1	3.761	29 7		7.60	
1165	B. A. C., 6716	6.5	19 30 11.66	1	3.754	28 55		7.69	
1166	Arg. C., 19811	9.5	19 30 17.54	2	3.536	—20 37		7.72	
1167	B. A. C., 6721	6 ✡	19 30 42		1.708	+47 51 40.27	3	7.73	
1168	Lalande, 37221	7.5	19 31 35.45	1	3.579	—22 23		7.80	
1169	σ Aquilæ	5 ✡	19 32 16.90	1	2.963	+ 5 5		7.86	
1170	Arg. C., 19861	7.5	19 33 5.63	2	3.649	—25 11		7.92	
1171	Arg. Z. S., 394, 36	9	19 33 6.78	1	3.690	26 42		7.93	
1172	e^1 Sagittarii	5.5 ✡	19 33 41.96	1	3.438	16 37		7.97	
1173	B. A. C., 6738	6.5	19 33 52.64	1	3.649	25 11		7.99	
1174	e^2 Sagittarii	5 ✡	19 34 30.56	2	3.434	—16 27		8.04	
1175	χ Aquilæ	6 ✡	19 35 58.67	1	2.823	+11 30		8.16	
1176	B. A. C., 6753	7	19 36 31.86	2	3.812	—31 14		8.20	
1177	B. A. C., 6755	5.5	19 37 4.85	2	3.841	32 15		8.24	
1178	Lacaille, 8214	7.5	19 37 38.87	1	3.841	32 16		8.29	
1179	f Sagittarii	5.5 ✡	19 38 11.43	2	3.517	20 6		8.33	
1180	Lalande, 37507	7.5	19 38 12.54	1	3.560	21 52		8.33	
1181	Arg. Z. S., 239, 69	9	19 39 34.97	1	3.670	—26 14		8.44	
1182	γ Aquilæ	3 ✡	19 39 36.13	10	2.852	+10 16		8.44	
1183	Arg. C., 19978	6	19 40 27.10	1	3.751	—29 8		8.51	
1184	δ Cygni	3.5 ✡	19 40 35.90	2	1.870	+44 47		8.52	
1185	B. A. C., 6777	6 ✡	19 40 37.99	1	2.235	+34 40		8.53	
1186	B. A. C., 6786	7 ✡	19 41 46.73	1	3.689	—27 4		8.62	
1187	B. A. C., 6795	7	19 43 3.91	1	3.697	27 26		8.72	
1188	Lacaille, 8249	7	19 43 49.24	1	3.833	—32 20		8.78	
1189	α Aquilæ	1.5 ✡	19 43 57.04	16	2.892	+ 8 30		8.79	
1190	Anonymous	9.5	19 44 20.62	2	3.572	—22 36		8.82	
1191	Arg. C., 20055	8.5 ✡	19 46 5.65	1	3.456	17 46 22.94	3	8.96	
1192	Lalande, 37873	7.5	19 47 14.65	2	3.498	19 39		9.05	
1193	ω Sagittarii	5	19 47 15.55	1	3.671	26 40		9.05	
1194	B. A. C., 6829	6.5 ✡	19 48		3.786	30 56 11.69	2	9.11	
1195	B. A. C., 6831	7	19 48 18		3.588	—23 25 53.87	1	9.13	
1196	β Aquilæ	3.5 ✡	19 48 26.08	19	2.945	+ 6 4		9.14	
1197	Anonymous	9.5	19 49 27.11	1	3.446	—17 29		9.22	
1198	g Sagittarii	5.5 ✡	19 50 0.38	2	3.409	15 53		9.26	
1199	B. A. C., 6841	6.5	19 50 06		3.782	30 54 33.35	2	9.27	
1200	Lacaille, 8296	6	19 51 18.46	1	+3.872	—34 4		+ 9.36	

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1201	B. A. C., 6854	7	19 51 55.82	1	+3.725	−28 57		+ 9.41	
1202	B. A. C., 6864	6	19 53 4.42	1	3.575	23 7		9.50	
1203	Lalande, 38164	8	19 53 53.64	2	3.488	19 29		9.56	
1204	c Sagittarii	4.5 ✡	19 54 2.67	1	3.699	28 6		9.57	
1205	B. A. C., 6877	5.5	19 55 26.45	5	3.817	32 27		9.68	
1206	Arg Z. S., 239, 92	8.5	19 55 46.49	1	3.661	26 43		9.70	
1207	B A. C., 6886	6.5	19 56 35.80	1	3.842	33 24		9.77	
1208	B. A. C., 6887	7	19 56 38.13	1	3.732	29 28 5.20	2	9.77	
1209	B. A. C., 6888	7	19 56 39.14	2	3.672	27 13		9.77	
1210	Lalande, 38290	8.5	19 56 56.22	1	3.478	19 10		9.79	
1211	Arg. C., 20217	8 ✡	19 57 23.79	2	3.423	16 45 58.40	3	9.83	
1212	B. A. C., 6899	6.8	19 58 40.94	4	3.746	30 7 14.10	2	9.93	
1213	Lacaille, 8354	7	20 0 26.10	1	3.861	34 17		10.06	
1214	Anonymous	9.5	20 1 8.91	1	3.410	16 20		10.11	
1215	Lacaille, 8365	7.5	20 2 2.25	1	+3.812	−32 44		10.18	
1216	λ Ursæ Minoris	5 ✡	20 3 54.39	13	−56.111	+88 53		10.32	
	S. P.		52.46	3					
1217	Lacaille, 8373	7	20 4 43.01	1	+3.859	−34 32		10.38	
1218	Arg. C., 20322	8.5 ✡	20 5 31.27	1	3.396	15 50		10.44	
1219	Anonymous		20 5 48		3.396	15 50 19.73	1	10.46	
1220	B. A. C., 6947	6	20 6 33.03	1	3.663	27 27		10.52	
1221	Arg. C., 20337	8.5 ✡	20 6 40.34	2	3.393	15 45 15.73	3	10.53	
1222	Arg. C, 20339	9 ✡	20 6 48.34	1	3.393	15 46		10.54	
1223	B. A. C., 6948	6.7	20 7 8.32	2	3.740	30 25 43.86	2	10.56	
1224	Arg. C., 20358	8.5 ✡	20 8 23.29	1	3.424	17 17		10.66	
1225	Arg. C., 20366	8	20 9 10.05	3	3.426	17 24		10.71	
1226	α^1 Capricorni	4 ✡	20 9 52.99	5	3.331	12 56		10.77	
1227	Arg. C., 20378	8	20 9 58.03	2	3.453	18 41		10.77	
1228	α^2 Capricorni	3	20 10 16.98	11	3.332	12 59		10.80	
1229	Lacaille, 8399	7.2	20 10 19.63	3	3.808	33 10		10.80	
1230	Arg. C., 20388	7.5	20 10 42.90		3.444	18 17		10.83	
1231	B. A. C., 6977	7 ✡	20 10 42		3.723	30 3 25.44	2	10.83	
1232	σ Capricorni	5.5 ✡	20 11 18.68	2	3.471	19 33		10.87	
1233	Arg. C., 20423	7.7	20 12 57.09	2	3.420	17 16		10.99	
1234	β Capricorni	3.5 ✡	20 13 8.58	1	3.376	15 13		11.01	
1235	Arg. Z. S., 240, 89	7	20 13 11.85	1	3.568	23 55		11.01	
1236	Lacaille, 8418	6.5	20 13 59.26	1	3.877	35 49		11.07	
1237	Anonymous	7.8	20 14 19.62	1	3.703	29 32		11.09	
1238	Lacaille, 8421	7	20 14 45.27	2	3.868	35 35		11.13	
1239	B. A. C., 7011	7 ✡	20 16 6		3.699	29 31 25.03	2	11.22	
1240	Anonymous	7	20 16 41.36	1	3.727	30 37		11.26	
1241	B. A. C., 7018	6.5 ✡	20 16 48		3.688	29 6 49.65	2	11.27	
1242	Lacaille, 8432	7	20 17 3.55	1	3.820	34 3		11.29	
1243	B. A. C., 7026	7	20 17 56.93	1	3.696	29 31 30.87	2	11.36	
1244	B. A. C., 7030	7	20 18 53.97	1	3.688	29 16		11.42	
1245	π Capricorni	5 ✡	20 19 18.26	1	3.443	18 40		11.45	
1246	B. A. C., 7032	7	20 19 22.69	1	3.673	28 43		11.46	
1247	B. A. C., 7033	7	20 19 29.64	1	3.701	29 50		11.47	
1248	ρ Capricorni	5 ✡	20 20 52.26	13	3.433	18 16		11.57	
1249	B. A. C., 7044	7 ✡	20 21 0.71	3	3.434	18 20		11.58	
1250	Arg. Z. S, 240, 98	7.5	20 21 23.40	2	3.542	23 18		11.60	
1251	Lacaille, 8466	6.2	20 22 21.93	3	3.689	29 34		11.67	
1252	B. A. C., 7063	6	20 22 18		3.374	15 31 13.84	2	11.69	
1253	Lacaille, 8471	7	20 23 50.73	1	4.046	41 59		11.78	
1254	B. A. C., 7071	7 ✡	20 24 6		3.673	29 3 55.24	2	11.80	
1255	Lacaille, 8485	7	20 25 14.27	3	3.688	29 46		11.88	
1256	Lacaille, 8487	6.5	20 25 47.54	1	3.929	38 34		11.92	
1257	Lacaille, 8492	6.5	20 26 8.71	2	3.716	30 57		11.94	
1258	Anonymous		20 26 54		3.073	0 4 38.34	1	11.99	
1259	Weisse XX, 664	9.5	20 26 56.11	1	3.357	14 55		12.00	
1260	B. A. C., 7093	7	20 27 27.87	3	+3.623	27 15 11.86	2	+12.03	

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1261	B. A. C., 7108	6.5	20 29 31.66	1	+ 3.581	—25 35		+12.18	
1262	B. A. C., 7111	7	20 29 31.88	2	3.521	22 55		12.18	
1263	Anonymous		20 30 23.73	1	+ 3.751	—32 40		12.24	
1264	B. A. C., 7184	5 ✡	20 31 1.29	2	—43.522	+88 42		12.28	
1265	τ^2 Capricorni	6 ✡	20 31 26.37	2	+ 3.364	—15 27		12.31	
1266	Lacaille, 8517	6	20 31 32.20	2	3.782	33 56		12.32	
1267	B. A. C., 7128	6.5	20 31 51.59	2	3.548	24 17		12.34	
1268	υ Capricorni	5 ✡	20 32 4.54	2	3.427	18 38		12.35	
1269	B A. C., 7135	7	20 32 8.27	1	3.633	28 4		12.35	
1270	1 Aquarii	5.5 ✡	20 32 12		3.072	0 0 11.67	1	12.36	
1271	B. A. C., 7139	7	20 32 22.20	4	3.656	29 2		12.37	
1272	Lacaille, 8529	6.2	20 32 42.20	2	3.731	—32 5		12.40	
1273	α Delphini	3.5 ✡	20 33 8.08	1	2.783	+15 25		12.43	
1274	Weisse XX, 847	8	20 33 28.02	2	3.257	—10 1		12.45	
1275	Anonymous		20 33 28.39	1	3.207	7 21		12.45	
1276	Weisse XX, 849	8.5	20 33 31.09	3	3.259	10 8 11.41	2	12.45	
1277	Lacaille, 8537	6.2	20 34 44.10	2	3.673	29 55		12.54	
1278	B. A. C., 7168	7	20 36 6.83	2	3.641	28 42		12.63	
1279	Weisse XX, 924	9 ✡	20 36 24		3.072	— 0 1 51.24	1	12.65	
1280	α Cygni	1	20 36 39.45	3	2.043	+44 47		12.66	
1281	Lacaille, 8546	7.5	20 36 48.76	1	3.699	—30 59		12.68	
1282	B. A. C., 7170	6.5 ✡	20 36 48		3.617	27 45 3.71	1	12.68	
1283	Weisse XX, 942	8	20 36 58.55	2	3.273	11 0		12.69	
1284	B. A. C., 7180	7 ✡	20 38		3.536	24 13 47.83	2	12.76	
1285	B. A. C., 7181	6.5	20 38 4.30	2	3.606	27 22		12.76	
1286	Anonymous	9	20 38 4.72	4	3.266	10 37 36.04	2	12.76	
1287	Anonymous	9.5	20 38 18.10	2	3.263	10 29 31.50	2	12.78	
1288	Anonymous	8.5	20 38 51.42	2	3.625	28 15		12.81	
1289	B. A. C., 7187	7	20 38 58.46	2	3.594	26 55		12.82	
1290	Anonymous	8.5	20 39 27.15	2	3.622	28 10		12.86	
1291	ε Aquarii	4.5 ✡	20 40 5.69	5	3.253	10 0		12.90	
1292	Lacaille, 8574	7.5	20 40 43.94	1	3.679	30 43		12.94	
1293	B. A. C., 7205	6	20 40 58.44	1	3.576	26 18		12.95	
1294	α Microscopii	4.5 ✡	20 41 12.81	2	3.768	34 18		12.98	
1295	Weisse XX, 1059	9	20 41 34.85	3	3.267	10 52		13.00	
1296	Lacaille, 8587	7	20 42 8.37	2	3.721	32 34		13.02	
1297	B. A. C., 7214	6.5 ✡	20 42 12		3.607	27 45 46.96	1	13.04	
1298	B. A. C., 7216	7 ✡	20 42 12		3.557	25 29 46.05	1	13.04	
1299	Lacaille, 8594	7	20 43 9.29	1	3.664	30 19		13.10	
1300	ω Capricorni	5	20 43 27.64	1	3.597	27 26		13.13	
1301	Lalande, 40235	7.5	20 43 35.42	1	3.402	18 6		13.13	
1302	Lacaille, 8608	6.7	20 44 34.08	2	3.702	32 2		13.20	
1303	Lacaille, 8610	6.5	20 44 51.04	1	3.682	31 15		13.21	
1304	Lacaille, 8616	7	20 45 42.32	1	3.615	28 27		13.27	
1305	Lacaille, 8619	7	20 47 13.93	4	3.697	32 5		13.37	
1306	Anonymous	7	20 47 18.74	4	3.695	32 2		13.38	
1307	B. A. C., 7252	6	20 48 27.66	2	3.574	—26 50		13.45	
1308	32 Vulpeculæ	4.5	20 48 35.57	10	2.555	+27 32		13.46	
1309	Weisse XX, 1269	7 ✡	20 50		3.073	— 0 4 7.66	1	13.55	
1310	Anonymous	9	20 50 24.84	1	3.298	12 55		13.58	
1311	Lacaille, 8630	6.2	20 51 8.67	2	3.803	36 40		13.62	
1312	Lacaille, 8632	6.5	20 51 53.14	1	3.778	35 50		13.67	
1313	Lacaille, 8635	6.5	20 52 3.26	1	3.798	36 36		13.68	
1314	Lacaille, 8640	6.7	20 52 35.25	2	3.642	30 17		13.72	
1315	Anonymous	7.8	20 52 38.29	2	3.642	30 19		13.72	
1316	1 Piscis Australis	5.7	20 52 41.60	3	3.700	32 48		13.72	
1317	Anonymous	7.8	20 52 59.31	1	3.595	—28 13		13.74	
1318	B. A. C., 7285	7 ✡	20 53 6		2.953	+ 6 58 22.19	1	13.75	
1319	Lacaille, 8647	7 ✡	20 53 11.07	1	3.597	—28 21		13.75	
1320	B. A. C., 7290		20 53 18.77	1	+ 2.135	+43 56		+13.76	

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Number.	Name.	Magnitude.	Right Ascensions, 1860 0.	No. of obs.	Precession.	Declinations, 1860.0.	No. of obs.	Precession.	Remarks.
			h. m. s.		s.	° ′ ″		″	
1321	Radcliffe, 5050	7	20 53 43.80	1	+ 2.139	+43 52		+13.79	
1322	Lacaille, 8658	7	20 54 31.17	2	3.623	−29 40		13.84	
1323	B. A. C., 7300	6	20 55 4.23	1	3.535	25 37		13.87	
1324	Lacaille, 8657	7	20 55 6.82	1	3.993	43 39		13.88	
1325	Anonymous		20 56 0.64	2	3.586	28 6		13.93	
1326	Lacaille, 8667	7	20 56 16.13	2	3.817	37 47		13.95	
1327	B. A. C., 7312	7	20 56 59.58	1	3.378	17 43		13.99	
1328	δ Microscopii	6.2	20 57 33.33	5	3.639	30 41		14.03	
1329	θ Capricorni	5.5 ✡	20 58 4.43	2	3.378	17 47		14.06	
1330	Anonymous		20 58 36		3.491	23 46 26.79	2	14.11	
1331	B. A. C., 7327	7 ✡	20 58 54		3.489	23 42 29.50	2	14.11	
1332	A Capricorni	5.5 ✡	20 58 54		3.526	25 33 44.61	1	14.11	
1333	Lacaille, 8691	7	20 59 3.90	2	3.574	−27 52		14.12	
1334	B. A. C., 7332	6 ✡	20 59 30.89	1	1.827	+52 43 48.21	3	14.15	
1335	Anonymous	7	20 59 51.49	1	3.471	−22 53		14.17	
1336	Lacaille, 8701	7	21 0 36.62	4	3.595	−29 2		14.22	
1337	61¹ Cygni	5.6 ✡	21 0 37.25	5	2.334	+38 4		14.22	
1338	61² Cygni	6 ✡	21 0 38.75	3	2.334	+38 4		14.22	
1339	Lacaille, 8706	7 ✡	21 1 46.16	1	3.691	−33 25		14.29	
1340	Anonymous	7.5	21 1 54.85	1	3.470	23 0		14.30	
1341	ν Aquarii	5 ✡	21 1 57.90	3	3.270	11 56		14.30	
1342	B. A. C., 7347	6.5	21 2 26.18	1	3.468	22 58		14.33	
1343	B. A. C., 7349	6.5	21 3 13.33	2	3.878	40 50		14.38	
1344	3 Piscis Australis	5.9	21 4 58.75	5	3.567	28 11		14.49	
1345	B. A. C., 7359	7	21 5 8.81	1	3.511	25 25		14.50	
1346	Arg. C., 21218	8	21 5 18.22	1	3.512	25 28		14.51	
1347	Lacaille, 8736	7	21 5 36.11	2	3.610	30 15		14.52	
1348	Lacaille, 8737	7	21 6 .87	1	3.874	41 6		14.56	Seconds of R. A. not recorded.
1349	Lacaille, 8741	7 ✡	21 6 33.01	1	3.529	−26 29		14.58	
1350	ζ Cygni	3 ✡	21 6 58.63	9	2.550	+29 39		14.61	
1351	Lacaille, 8742	6.5	21 7 3.12	1	3.757	−36 48		14.61	
1352	Lacaille, 8758	6.7	21 9 0.19	6	3.625	31 20		14.73	
1353	Anonymous	7	21 9 2.27	1	3.817	39 23		14.73	
1354	4 Piscis Australis	5	21 9 26.24	1	3.655	32 45 17.33	2	14.75	
1355	Lacaille, 8764	7	21 10 36		3.873	41 38 17.70	2	14.82	
1356	Lacaille, 8769	7	21 10 37.48	2	3.577	29 21		14.82	
1357	Lacaille, 8777	7	21 11 39.37	1	3.527	26 55		14.88	
1358	Lacaille, 8787	7 ✡	21 13 29.90	4	3.580	29 46		14.99	
1359	Lacaille, 8790	7	21 14 21.10	2	3.583	30 2		15.04	
1360	ι Capricorni	5 ✡	21 14 26.70	2	3.350	17 26		15.05	
1361	Lacaille, 8791	7	21 14 49.04	1	3.770	38 20		15.07	
1362	B. A. C., 7413	6	21 14 58.54	2	3.451	−23 16		15.08	
1363	α Cephei	3 ✡	21 15 14.15	5	1.416	+62 0		15.09	
1364	θ² Microscopii	6 ✡	21 15 18		3.854	−41 36 12.89	2	15.11	
1365	Lacaille, 8804	7	21 16 40.96	1	3.694	35 27		15.18	
1366	B. A. C., 7434	7	21 17 40.53	1	3.493	25 50		15.23	
1367	B. A. C., 7436	7 ✡	21 17 42		3.467	24 25 21.12	2	15.23	
1368	Lacaille, 8821	7	21 19 19.40	4	3.537	28 20		15.33	
1369	Arg. C., 21404	7.7	21 20 9.27	3	3.512	27 9		15.37	
1370	5 Piscis Australis	6.5	21 20 41.04	1	3.604	31 51		15.40	
1371	Lacaille, 8824	7 ✡	21 21 7.49	1	3.917	44 41 7.06	1	15.43	
1372	B. A. C., 7467	7	21 22 20.39	1	3.482	25 48 12.85	2	15.49	
1373	Lacaille, 8834	7	21 22 37.40	1	3.491	26 19		15.51	
1374	Arg. C., 21441	7	21 23 33.91	2	3.482	25 55		15.56	
1375	Lacaille, 8839	6.5	21 23 45.27	2	3.483	26 1		15.57	
1376	β Aquarii	3 ✡	21 24 11.15	13	3.163	6 11		15.60	
1377	Lacaille, 8849	6.3	21 26 36.94	3	+ 3.557	−30 19		15.73	
1378	B. A. C., 7504	6 ✡	21 26 48.24	1	−10.284	+86 27		15.74	
1379	β Cephei	3 ✡	21 26 50.23	3	+ 0.802	+69 57		15.74	
1380	Arg. C., 21492	9	21 27 54.80	2	+ 3.479	−26 17		+15.80	

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			h. m. s.		s.	° ′ ″		″	
1381	8 Piscis Australis - - -	6	21 28 3.45	1	+3.488	—26 48		+15.81	
1382	7 Piscis Australis - - -	6	21 28 23.72	1	3.619	33 40		15.83	
1383	Arg. C., 21497 - - -	9	21 28 26.19	2	3.481	—26 27		15.83	
1384	B. A. C., 7508 - - -	6 ✡	21 29 9.69	1	0.800	+70 12 16.48	4	15.87	
1385	Lacaille, 8862 - - -	7 ✡	21 30 9.36	2	3.547	—30 17		15.92	
1386	ξ Aquarii - - - - -	5 ✡	21 30 17.74	2	3.193	8 29		15.93	
1387	Σ. Cat. General, 2611 -	6	21 30 22.24	2	3.086	1 1		15.93	
1388	Lacaille, 8867 - - -	6.5	21 30 40.27	1	3.625	34 18		15.95	
1389	Lacaille, 8870 - - -	6.5	21 30 58.00	2	3.501	27 56		15.96	
1390	B. A. C., 7523 - - -	7 ✡	21 31 54		3.449	25 4 37.77	2	16.01	
1391	γ Capricornii - - - -	4 ✡	21 32 19.71	1	3.322	17 18		16.03	
1392	Anonymous - - - -	7	21 33 18.00	3	3.593	33 8		16.08	
1393	Lacaille, 8890 - - -	6.5	21 33 44.35	2	3.456	25 44		16.11	
1394	Lacaille, 8889 - - -	6.8	21 33 52.15	3	3.592	33 9		16.11	
1395	Lacaille, 8891 - - -	7	21 33 56.46	1	3.501	28 19		16.12	
1396	B. A. C., 7538 - - -	6.5	21 34 5.37	1	3.843	44 8		16.13	
1397	B. A. C., 7549 - - -	7 ✡	21 35 24		3.436	24 46 41.61	2	16.19	
1398	Lacaille, 8902 - - -	6.5	21 36 31.47	1	3.446	25 32		16.25	
1399	ι Piscis Australis - - -	6	21 36 35.74	1	3.594	—33 40		16.26	
1400	Comp. of ε. Pegasi -		21 37 13.06	2	2.945	+ 9 16		16.29	
1401	ε Pegasi - - - - -	2.5 ✡	21 37 18.54	8	2.945	+ 9 14		16.29	
1402	Lacaille, 8907 - - -	7	21 37 20.83	1	3.500	—28 46		16.30	
1403	Lacaille, 8906 - - -	7	21 37 22.92	2	3.511	—29 22		16.30	
1404	μ Cygni - - - - -	5 ✡	21 37 52.91	1	2.657	+28 7		16.32	
1405	Lacaille, 8911 - - -	6.5	21 38 4.69	3	3.583	—33 22		16.33	
1406	Weisse XXI, 916 - -	8	21 38 11.22	2	3.084	0 51		16.34	
1407	Lacaille, 8918 - - -	7	21 39 35.08	2	3.487	28 23		16.41	
1408	Lacaille, 8923 - - -	7	21 40 7.48	1	3.455	26 32		16.43	
1409	Lacaille, 8929 - - -	7	21 41 29.56	1	3.693	39 15		16.50	
1410	Lacaille, 8934 - - -	6.7	21 41 48.98	4	3.476	28 4		16.51	
1411	Lacaille, 8937 - - -	7	21 42 40.49	2	3.483	28 35		16.56	
1412	Lacaille, 8941 - - -	6.8	21 43 26.14	2	3.405	23 55		16.60	
1413	Weisse XXI, 1033 - -	8 ✡	21 43 58.91	1	3.261	14 9		16.63	
1414	Lacaille, 8947 - - -	7	21 44 25.50	1	3.468	27 58		16.65	
1415	μ Capricornii - - - -	5 ✡	21 45 39.57	1	3.259	14 12		16.71	
1416	Anonymous - - - -	7	21 46 4.25	1	3.622	36 41		16.73	
1417	B. A. C., 7620 - - -	6 ✡	21 46 06		3.215	—10 58 6.03	2	16.73	
1418	15 Pegasi - - - - -	6	21 46 14.79	1	2.678	+28 8		16.74	
1419	16 Pegasi - - - - -	5.5 ✡	21 46 41.49	4	2.725	+25 16		16.76	
1420	Lacaille, 8965 - - -	6.5	21 47 45.25	8	3.515	—31 16		16.81	
1421	B. A. C , 7632 - - -	6	21 47 56.48	2	3.640	37 55		16.82	
1422	Lacaille, 8968 - - -	7	21 49 2.18	2	3.443	27 9		16.87	
1423	B. A. C., 7647 - - -	6	21 50 49.34	1	3.652	39 4		16.95	
1424	B. A. C., 7652 - - -	7 ✡	21 51 24		3.382	23 32 22.80	2	16.98	
1425	Lacaille, 8981 - - -	6.8	21 51 26.22	6	3.478	29 43		16.98	
1426	11 Piscis Australis - - -	6.8	21 51 32.73	2	3.455	28 17 51.17	2	16.99	
1427	Lacaille, 8985 - - -	6.8	21 51 45.30	2	3.519	32 12		17.00	
1428	Lacaille, 9000 - - -	7	21 54 22.58	3	3.522	32 52		17.12	
1429	Lacaille, 9003 - - -	7	21 54 41.58	3	3.443	28 5		17.13	
1430	29 Aquarii, (2d ✡) - - -	6 ✡	21 54 45.78	1	3.293	17 38		17.13	
1431	Lacaille, 9004 - - -	6.7	21 55 10.68	2	3.481	30 34		17.15	
1432	Lacaille, 9007 - - -	7 ✡	21 55 35.08	1	3.471	30 2		17.17	
1433	Anonymous - - - -		21 55 35.11	1	3.414	26 21		17.17	
1434	Lacaille, 9006 - -	7	21 55 54.88	1	3.641	39 33		17.19	
1435	13 Piscis Australis - - -	6.5	21 56 19.04	1	3.478	30 36		17.20	
1436	Lalande, 43040 - - -	8	21 58 5.88	1	3.310	19 21		17.28	
1437	Weisse XXI, 1333 - -	9	21 58 7.49	3	3.198	10 34 29.22	2	17.28	
1438	α Aquarii - - - - -	3 ✡	21 58 35.46	17	3.084	1 0		17.31	
1439	ι Aquarii - - - - -	4.7 ✡	21 58 52.41	1	3.247	14 33		17.32	
1440	α Gruis - - - - -	2 ✡	21 59 23.61	1	+3.808	—47 38		+17.34	

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			h. m. s.		s.	° ′ ″		″	
1441	Anonymous	7	21 59 49.23	1	+3.464	−30 21		+17.36	
1442	Weisse XXI, 1375	9 ✡	21 59 54		3.188	9 51 47.22	2	17.36	
1443	Weisse XXI, 1384	8	22 0 19.41	3	3.199	10 45 34.21	2	17.38	
1444	Lacaille, 9036	6	22 1 44.35	1	3.529	34 42		17.44	
1445	B. A. C., 7715	6.5	22 2 0.64	2	3.437	28 59		17.46	
1446	Weisse XXII, 13	8 ✡	22 2 5.85	2	3.182	9 29 5.82	2	17.46	
1447	Lacaille, 9045	7	22 3 6.42	1	3.596	38 44		17.50	
1448	B. A. C., 7729	7	22 3 30.77	6	3.416	27 50		17.52	
1449	Lacaille, 9052	7	22 4 4.27	1	3.633	40 54		17.54	
1450	B. A. C., 7739	6.8	22 4 41.37	5	3.412	27 46		17.57	
1451	39 Aquarii	7 ✡	22 4 52.45	1	3.243	14 53		17.58	
1452	B. A. C., 7745	6	22 5 52.04	2	3.382	25 52		17.62	
1453	θ Aquarii	4.9 ✡	22 9 26.59	24	3.164	8 29		17.77	
1454	Lacaille, 9091	7 ✡	22 10 3.58	1	3.542	−37 18		17.79	
1455	Anonymous		22 11 2.12	1	1.697	+66 0		17.83	
1456	ρ Aquarii	5.5 ✡	22 12 49.77	13	3.162	− 8 31		17.90	
1457	Lacaille, 9109	7	22 14 5.86	2	3.364	−26 4		17.95	
1458	Lalande, 43630	7	22 14 18.78	1	2.630	+36 36		17.96	
1459	γ Aquarii	3.7 ✡	22 14 25.43	3	3.094	− 2 5		17.97	
1460	Lacaille, 9113	7 *	22 15 21.30	1	3.367	26 33		18.00	
1461	Lacaille, 9126	7	22 16 49.06	3	3.338	24 5		18.06	
1462	Lacaille, 9127	7	22 16 55.90	3	3.375	27 34		18.06	
1463	B. A. C., 7809	7 ✡	22 17 22.35	1	3.091	1 54		18.08	
1464	Lacaille, 9130	7	22 18 15.41	1	3.401	29 48		18.11	
1465	Lacaille, 9131	7	22 18 18.44	1	3.386	28 42		18.11	
1466	B. A. C., 7817	6 ✡	22 18 25.78	2	3.332	24 24		18.12	
1467	B. A. C., 7818	6.5 ✡	22 18 57.75	1	3.251	17 27		18.14	
1468	53 Aquarii	6.5 ✡	22 18 58.17	1	3.251	17 27		18.14	
1469	Lacaille, 9135	7	22 19 50.40	3	3.362	27 8		18.17	
1470	Lacaille, 9139	7 ✡	22 20 59.14	1	3.505	37 41		18.21	
1471	Lacaille, 9144	7	22 21 33.83	3	3.385	29 22		18.23	
1472	ζ^1 Aquarii	4.5 ✡	22 21 37.33	2	3.079	0 44		18.24	
1473	ζ^2 Aquarii		22 21 37.39	1	3.079	0 44		18.24	
1474	Lacaille, 9151	6.8	22 21 55.50	2	3.365	27 49		18.25	
1475	Weisse XXII, 467	8 ✡	22 22 34.67	1	3.161	9 7 59.15	2	18.27	
1476	Lacaille, 9159	7	22 23 5.26	1	3.411	31 43		18.29	
1477	Lacaille, 9163	6.5	22 23 41.73	1	3.468	−36 0		18.31	
1478	Anonymous		22 23 51.28	1	+3.010	+ 6 32		18.32	
1479	B. A. C., 7851	5	22 23 52.95	2	−3.695	85 24		18.32	
1480	Anonymous	9	22 24 6.09	1	+3.008	6 42		18.33	
1481	Weisse XXII, 518	9 ✡	22 25 2.42	1	3.009	6 41		18.36	
1482	α Lacerta	4 ✡	22 25 31.60	1	2.444	+49 34		18.38	
1483	Lacaille, 9169	7	22 25 41.34	5	3.386	−30 23		18.38	
1584	η Aquarii	4.2 ✡	22 28 9.64	19	3.080	0 50		18.47	
1485	B. A. C., 7872	6	22 28 41.94	1	3.401	32 23		18.49	
1486	Lacaille, 9184	7	22 28 45.35	1	3.401	−32 23		18.49	
1487	Weisse XXII, 601	8.5 ✡	22 29 9.25	2	3.004	+ 7 33		18.50	
1488	Lacaille, 9190	7	22 30 5.24	1	3.419	−34 11		18.53	
1489	κ Aquarii	6 ✡	22 30 30.28	1	3.116	− 4 57		18.55	
1490	Weisse XXII, 645	9 ✡	22 30 59.33	2	2.995	+ 8 38		18.56	
1491	Weisse XXII, 641	6 ✡	22 31 1.35	2	3.149	− 8 37 24.25	2	18.56	
1492	Weisse XXII, 658	7 ✡	22 31 27.05	1	2.996	+ 8 32		18.58	
1493	Lalande, 44272	8	22 31 50.60	2	3.005	7 39		18.59	
1494	Lalande, 44279	8	22 31 59.12	2	3.005	+ 7 39		18.60	
1495	Weisse XXII, 675	9	22 32 10.57	3	3.145	− 8 19 52.37	2	18.60	
1496	B. A. C., 7895	6	22 32 32.94	1	3.376	31 23		18.62	
1497	ε Piscis Australis	4	22 32 54.27	1	3.333	−27 46		18.63	
1498	ζ Pegasi	4 ✡	22 34 28.75	14	2.985	+10 6		18.68	
1499	Weisse XXII, 761	8 ✡	22 35 53.84	2	3.139	− 7 56 49.22	2	18.72	
1500	Lacaille, 9244	7	22 39 2.55	1	+3.383	−33 55		+18.82	

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1501	Lacaille, 9246	7	22 39 16.17	1	+3.376	—33 24		+18.82	
1502	B. A. C., 7950	6.5 ✡	22 40 13.91	1	2.608	+45 29		18.85	
1503	Lacaille, 9256	6.5	22 40 14.79	3	3.301	—26 38		18.86	
1504	Lacaille, 9261	6.5	22 40 46.04	1	3.316	—28 18		18.87	
1505	Anonymous		22 40 54.51	1	2.354	+57 47		18.87	Minute of R. A. doubtful.
1506	B. A. C., 7953	6 ✡	22 41 49.69	1	2.363	+57 45		18.90	
1507	Anonymous	6	22 42 10.46	1	3.368	—33 35		18.91	
1508	τ^2 Aquarii	5.5 ✡	22 42 10.57	3	3.186	14 20		18.91	
1509	Anonymous		22 42 33.62	1	3.186	14 22		18.92	
1510	Weisse XXII, 900	8.5 ✡	22 43 12		3.131	— 7 38 58.31	2	18.94	
1511	μ Pegasi	4 ✡	22 43 14.78	2	2.878	+23 52		18.94	
1512	Lacaille, 9286	7	22 44 32.66	1	3.437	—40 12		18.98	
1513	γ Piscis Australis	5 ✡	22 44 44.04	1	3.359	33 37		18.98	
1514	Lacaille, 9290	7	22 44 59.19	1	3.319	29 54		18.99	
1515	λ Aquarii	4 ✡	22 45 18.56	1	3.134	8 19		19.00	
1516	Weisse XXII, 962	8.5 ✡	22 46 24		3.123	6 51 6.36	2	19.03	
1517	Lacaille, 9296	7	22 46 41.82	1	3.274	25 43		19.04	
1518	75 Aquarii	7	22 46 43.86	1	3.168	12 56		19.04	
1519	δ Aquarii	3 ✡	22 47 12.93	1	3.196	16 34		19.05	
1520	Lacaille, 9298	7 *	22 47 22.86	2	+3.387	—37 8		19.06	
1521	B. A. C., 7990	5.5 ✡	22 47 54.62	1	—0.033	+82 25		19.07	
1522	Lalande, 44823	7 ✡	22 48		+3.230	—20 53 2.08	2	19.07	
1523	Weisse XXII, 995	8 ✡	22 48 6		3.119	6 26 3.95	1	19.08	
1524	Lacaille, 9307	6.5	22 48 36.20	2	3.331	32 18		19.09	
1525	α Piscis Australis	1.2 ✡	22 49 54.43	16	3.308	30 22		19.13	
1526	Lalande, 44877	7.5	22 50 6.48	1	3.226	21 1 19.27	2	19.13	
1527	Weisse XXII, 1049	8.5 ✡	22 50 54		3.117	6 26 0.67	3	19.15	
1528	Weisse XXII, 1057	8.5 ✡	22 51 18		3.116	— 6 25 17.33	1	19.16	
1529	Weisse XXII, 1082	7 ✡	22 52 11.65	1	2.996	+10 58 55.42	2	19.18	
1530	Anonymous		22 52 24		2.993	11 27 0.88	1	19.19	
1531	Weisse XXII, 1108	9 ✡	22 53 18		2.994	+11 29 25.10	1	19.21	
1532	Lacaille, 9333	6.2	22 53 40.27	2	3.289	—29 36		19.22	
1533	81 Aquarii	6 ✡	22 54 6.88	2	3.124	7 48 41.04	2	19.23	
1534	Anonymous	10	22 54 23.50	2	3.217	—20 57 38.17	2	19.24	
1535	Weisse XXII, 1159	9	22 55 12.20	2	+2.994	+11 47 7.74	2	19.26	
1536	B. A. C., 8026	5.5 ✡	22 55 21.98	1	—0.244	83 36		19.26	
1537	o Andromeda	4	22 55 29.08	1	+2.743	+41 35		19.27	
1538	Lacaille, 9356	6.5	22 56 4.50	1	3.295	—31 12		19.28	
1539	β Piscium	5 ✡	22 56 45.04	3	3.052	+ 3 4		19.30	
1540	Weisse XXII, 1203	8 ✡	22 57 6.93	3	3.119	— 7 26 29.62	2	19.31	
1541	α Pegasi	2 ✡	22 57 47.29	3	2.980	+14 27		19.32	
1542	Groombridge, 3975	5 ✡	22 58 13.80	1	2.255	+66 27		19.33	
1543	Lacaille, 9373	7	22 59 20.10	1	3.280	—30 46		19.36	
1544	Anonymous	8	22 59 41.94	1	2.270	+66 33		19.37	
1545	Weisse XXII, 1272	9 ✡	23 0 42		3.105	— 5 31 58.50	2	19.39	
1546	Weisse XXII, 1283	9 ✡	23 1 24		3.105	5 32 10.20	2	19.40	
1547	Weisse XXIII, 12	9	23 2 19.13	1	3.148	12 48		19.42	
1548	Weisse XXIII, 14	9	23 2 25.21	1	3.148	12 51		19.43	
1549	ι Gruis	5 ✡	23 2 25.24	1	3.416	46 0		19.43	
1550	89 Aquarii	5 ✡	23 2 25.87	2	3.215	23 13		19.43	
1551	Lacaille, 9388	6.5	23 3 11.99	1	3.264	—30 17		19.44	
1552	π Cephei	5 ✡	23 3 27.60	4	1.884	+74 38		19.45	
1553	Lacaille, 9391	7	23 3 40.01	1	3.243	—27 41		19.45	
1554	Arg. C., 22657	7	23 3 41.63	1	3.242	—27 39		19.45	
1555	Weisse XXIII, 48	7.5 ✡	23 4 6		3.048	+ 4 14 43.21	2	19.46	
1556	59 Pegasi	5.5 ✡	23 40 4.06	1	3.027	7 58		19.47	
1557	Weisse XXIII, 61	8.5	23 4 46.48	1	3.027	8 2		19.48	
1558	7 Andromedæ	5 ✡	23 6 8.76	2	2.718	+48 38		19.51	
1559	Weisse XXIII, 88	9	23 6 15.43	2	3.111	— 7 5 8.30	2	19.51	
1560	Weisse XXIII, 98	10	23 6 29.36	1	+3.111	— 7 7		+19.51	

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Number.	Name.	Magnitude.	Right Ascensions, 1860. 0.	No. of obs.	Precession.	Declinations, 1860. 0.	No. of obs.	Precession.	Remarks.
			h. m. s.		s.	° ″ ′			
1561	Weisse XXIII, 111	8 ✡	23 6 54		+3.049	+ 4 14 11.48	2	+19.52	
1562	φ Aquarii	5	23 7 4.23	4	3.108	— 6 48 10.27	4	19.52	
1563	Anonymous	7	23 7 12.47	1	3.327	39 55		19.53	
1564	Lacaille, 9411	7	23 7 50.50	1	3.217	25 36		19.54	
1565	Lalande, 45473	9	23 8 8.03	1	3.179	19 38		19.54	
1566	Anonymous	8	23 8 21.47	1	3.323	—40 1		19.55	
1567	Piazzi XXIII, 21	7.5	23 8 28.76	1	3.069	+ 0 33		19.55	
1568	γ Piscium	4.5 ✡	23 9 54.46	13	3.059	+ 2 31		19.58	
1569	ψ² Aquarii	5 ✡	23 10 37.50	1	3.122	— 9 57		19.59	
1570	Lacaille, 9436	7	23 11 22.43	2	3.231	29 31		19.61	
1571	Lacaille, 9440	7	23 11 45.18	1	3.306	39 55		19.61	
1572	Lalande, 45648	9 ✡	23 12 6		3.169	19 19 11.90	2	19.62	
1573	Lacaille, 9447	7	23 12 36.78	1	3.192	—23 36		19.63	
1574	b Piscium	6 ✡	23 13 12		3.050	+ 4 37 5.73	2	19.64	
1575	B. A. C., 8129	7 ✡	23 13 27.64	1	3.103	— 6 40		19.64	
1576	Lalande, 45704	8 ✡	23 13 34.25	2	3.166	19 19		19.65	
1577	Lacaille, 9453	7	23 15 24.71	1	3.188	24 13		19.68	
1578	Lacaille, 9458	7	23 16 14.05	1	3.230	31 52		19.69	
1579	B. A. C., 8154¹	7 ✡	23 16 29.61	3	3.113	9 14		19.70	
1580	B. A. C., 8154²		23 16 30.10	2	3.113	9 14		19.70	
1581	Lalande, 45804	8 ✡	23 16 30		3.157	—18 33 25.92	2	19.70	
1582	Weisse XXIII, 340	8 ✡	23 17 12		3.048	+ 5 25 7.29	2	19.71	
1583	Weisse XXIII, 342	8	23 17 21.37	4	3.012	+13 42 42.80	2	19.71	
1584	Lalande, 45838	9 ✡	23 17 54		3.155	—18 51 49.06	2	19.72	
1585	Weisse XXIII, 359	9 ✡	23 18 12		3.050	+ 5 16 21.49	2	19.72	
1586	υ Pegasi	5 ✡	23 18 23.56	1	2.971	+22 38		19.73	
1587	Lacaille, 9473	6.5	23 18 44.96	1	3.200	—28 12		19.73	
1588	κ Piscium	5.5 ✡	23 19 45.30	13	3.070	+ 0 29		19.75	
1589	9 Piscium	6 ✡	23 20 4.46	1	3.071	0 21		19.75	
1590	θ Piscium	5 ✡	23 20 54		3.050	5 36 39.17	2	19.77	
1591	Santini, 1633	7.5	23 21 8.60	4	3.051	5 18 21.18	2	19.77	
1592	Weisse XXIII, 419	9 ✡	23 21 20.81	1	3.052	+ 5 2		19.77	
1593	B. A. C., 8184	7 ✡	23 22 18		3.092	— 5 17 42.94	3	19.79	
1594	Santini, 1635	8	23 22 24.69	1	3.052	+ 5 19 56.89	1	19.79	
1595	Weisse XXIII, 443	8.5	23 22 25.14	1	3.071	0 20		19.79	
1596	Weisse XXIII, 449	8	23 22 45.94	1	3.071	+ 0 24		19.79	
1597	Lacaille, 9497	7	23 22 54.02	1	3.162	—22 38		19.79	
1598	Lacaille, 9496	7	23 23 3.04	1	3.238	—37 44		19.80	
1599	Weisse XXIII, 458	8.5 ✡	23 23 14.56	3	3.051	+ 5 39 17.56	2	19.80	
1600	b³ Aquarii (8194)	6 ✡	23 24 21.38	2	3.156	—22 8		19.80	
1601	B. A. C., 8196	7.5	23 24 28.26	1	3.155	22 1		19.80	
1602	Anonymous	7	23 24 48.30	1	3.157	—22 38		19.81	
1603	Weisse XXIII, 528	9	23 27 26.48	4	+3.021	+15 11 43.16	2	19.85	
1604	B. A. C., 8213	5.5 ✡	23 27 49.02	5	—0.019	86 32		19.86	
	S. P.		49.51	1					
1605	Weisse XXIII, 539	9 ✡	23 27 50.87	1	+3.022	+15 6		19.86	
1606	Lacaille, 9527	6.5	23 28 16.61	1	3.169	—28 15		19.86	
1607	B. A. C., 8214	6.5 ✡	23 28 18.71	1	3.099	8 14		19.86	
1608	Lacaille, 9534	7 ✡	23 29 40.81	1	3.185	32 38		19.88	
1609	Weisse XXIII, 609	9 ✡	23 29 59.60	3	3.078	1 53		19.88	
1610	Weisse XXIII, 613	9 ✡	23 30 5.22	3	3.078	1 49 25.62	1	19.89	
1611	Anonymous		23 30 12		3.078	1 54 38.79	1	19.89	
1612	B. A. C., 8225	7	23 30 46.31	1	3.120	15 52		19.89	
1613	Lamont, 2822		23 31 0.65	2	3.077	1 36		19.90	
1614	Lamont, 2823		23 31 5.10	4	3.077	— 1 38		19.90	
1615	ι Andromedæ	4	23 31 16.68	1	2.915	+42 30		19.90	
1616	Lamont, 2824		23 32 16.33	3	3.077	— 1 45		19.91	
1617	Lacaille, 9547	6.7	23 32 26.78	2	3.178	—33 30		19.91	
1618	ι Piscium	4.5	23 32 45.04	7	3.059	+ 4 52		19.91	
1619	Weisse XXIII, 679	9 ✡	23 33 23.06	1	3.053	7 4		19.92	
1620	Weisse XXIII, 683	8.5 ✡	23 33 31.32	1	+3.053	+ 7 6 38.14	2	+19.92	

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Number.	Name.	Magnitude.	Right Ascensions, 1860. 0.	No. of obs.	Precession.	Declinations, 1860. 0.	No. of obs.	Precession.	Remarks.
			h. m. s.		s.	° ′ ″		″	
1621	Weisse XXIII, 685	8.5 ✡	23 33 34.43	2	+3.053	+ 7 10		+19.92	
1622	γ Cephei	3 ✡	23 33 37.79	2	2.415	+76 51		19.92	
	S P.		37.87	1					
1623	A¹ Aquarii	5 ✡	23 34 18.67	1	3.123	−18 48		19.93	
1624	Weisse XXIII, 705	9 ✡	23 34 36		3.053	+ 7 25 42.25	2	19.93	
1625	Weisse XXIII, 710	6.5 ✡	23 34 48		3.055	6 28 34.46	5	19.94	
1626	λ Piscium	5 ✡	23 34 54.13	1	3.069	1 1		19.94	
1627	B. A. C., 8247	7	23 35 26.59	1	3.026	+17 54		19.94	
1628	Lacaille, 9568	6.8	23 35 42.38	2	3.153	−29 49		19.94	
1629	Weisse XXIII, 730	8 ✡	23 36 6		3.076	− 1 29 1.83	2	19.95	
1630	Weisse XXIII, 749	9 ✡	23 36 59.05	2	3.053	+ 8 10 1.06	2	19.96	
1631	Anonymous		23 37		3.057	6 28 27.48	1	19.96	
1632	B. A. C., 8257	7 ✡	23 37 42		3.057	+ 6 24 57.88	3	19.96	
1633	Weisse XXIII, 767	7 ✡	23 37 48		3.075	− 1 26 12.05	1	19.96	
1634	Anonymous		23 38		3.075	1 28 19.18	1	19.96	
1635	i² Aquarii	6	23 38 44.42	1	3.116	19 27		19.97	
1636	Weisse XXIII, 783	8.1	23 38 49.84	6	3.073	− 0 30 47.41	2	19.97	
1637	τ Cassiopieæ	5	23 40 13.58	1	2.889	+57 52		19.98	
1638	Weisse XXIII, 817	7 ✡	23 40 31.71	1	3.075	− 1 32 17.15	4	19.98	
1639	20 Piscium	5.5 ✡	23 40 44.69	1	3.079	− 3 32		19.98	
1640	Weisse XXIII, 828.9	9 ✡	23 41		3.054	+ 9 22 13.38	2	19.99	
1641	B. A. C., 8272	7 ✡	23 41		3.058	+ 7 28 10.12	2	19.99	
1642	Weisse XXIII, 830	8 ✡	23 41 1.72	1	3.075	− 1 33 4.98	1	19.99	
1643	Arg. C., 23054	7.5	23 41 2.64	1	3.133	−28 40		19.99	
1644	Weisse XXIII, 831	7.5 ✡	23 41 6		3.060	+ 6 23 12.38	2	19.99	
1645	δ Sculptoris	5 ✡	23 41 37.71	5	3.131	−28 54		19.99	
1646	B. A. C., 8280	7 ✡	23 42 2.99	1	2.896	+59 12		19.99	
1647	Lacaille, 9605	6.7	23 42 3.67	2	3.129	−28 37		19.99	
1648	Weisse XXIII, 870	9	23 42 59.04	1	3.061	+ 6 16 10.89	1	20.00	
1649	B. A. C., 8287	7 ✡	23 43 19.60	1	3.109	−21 0		20.00	
1650	Anonymous	9.5	23 43 19.96	2	3.060	+ 7 20 13.51	2	20.00	
1651	Lacaille, 9625	7	23 44 37.82	1	3.132	−33 54		20.01	
1652	82 Pegasi	6	23 45 28.77	1	3.057	+10 10 9.84	2	20.02	
1653	Weisse XXIII, 916	9.8	23 45 32.37	5	3.074	− 1 35 9.87	2	20.02	
1654	Weisse XXIII, 932	8.5	23 46		3.064	+ 5 55 15.98	2	20.02	
1655	Lacaille, 9636	7	23 46 28.74	1	3.118	−30 11		20.02	
1656	Anonymous		23 47 42		3.073	− 1 3 33.11	2	20.03	
1657	26 Piscium	6 ✡	23 47 58.11	2	3.064	+ 6 18		20.03	
1658	B. A. C., 8314	5 ✡	23 48 3.69	1	2.835	73 38		20.03	
1659	Santini, 1664	7 ✡	23 48 30		3.064	7 26 41.59	2	20.03	
1660	Rumker, 11777	7.5	23 49 37.28	1	3.068	+ 3 57		20.03	
1661	Lacaille, 9663	7	23 50 23.87	2	3.110	−33 58		20.04	
1662	Weisse XXIII, 1030	7 ✱	23 50 36		3.062	+10 41 45.02	1	20.04	
1663	Weisse XXIII, 1039	9 ✡	23 50 54		3.073	− 0 54 25.42	2	20.04	
1664	Anonymous		23 51		3.062	+10 43 41.15	1	20.04	
1665	σ Cassiopieæ	5.5 ✡	23 51 55.21	2	3.004	54 59		20.04	
1666	ω Piscium	4.5 ✡	23 52 7.38	13	3.067	6 5 19.02	2	20.04	
1667	B. A. C., 8336	6.5 ✡	23 53 2.57	7	2.503	+85 56		20.05	
1668	Lacaille, 9695	7	23 54 10.37	2	3.091	−29 30		20.05	
1669	29 Piscium	5	23 54 38.89	2	3.074	− 3 48		20.05	
1670	c¹ Piscium	7.5	23 55 14.01	5	3.068	+ 8 10 39.08	2	20.05	
1671	Weisse XXIII, 1146	8	23 55 48		3.073	− 1 40 16.97	3	20.05	
1672	Lacaille, 9706	6.2	23 57 10.05	2	3.082	30 4		20.05	
1673	Lacaille, 9707	7	23 57 12.81	2	3.082	−30 10		20.05	
1674	Weisse XXIII, 1179	8	23 57 36.23	1	3.071	+ 0 45		20.06	
1675	Weisse XXIII, 1180	9 ✡	23 57 40.00	1	3.069	+ 5 38		20.06	
1676	Weisse XXIII, 1196	9	23 58 23.21	1	3.076	−10 54		20.06	
1677	Weisse XXIII, 1201	8.5 ✡	23 58 48.51	1	3.068	+12 5 43.75	2	20.06	
1678	Weisse XXIII, 1208	8	23 59 6.95	1	3.074	−11 34		20.06	
1679	Weisse XXIII, 1212	8.5	23 59 24		3.069	+12 3 8.76	2	20.06	
1680	Weisse XXIII, 1222	8	23 59 53.81	4	+3.070	+ 6 6		+20.06	

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TABLES OF PARALLAX

FOR THE

LATITUDE OF THE U. S. NAVAL OBSERVATORY,

AND A

HORIZONTAL PARALLAX

OF

10 SECONDS.

Hosted by Google

Hour angle.	−40°.		−39°.		−38°.		−37°.		−36°.		−35°		−34°.		−33°.		−32°.		−31°.		−30°.		Hour angle.
	Δ α	Δ δ	Δ α	Δ δ	Δ α	Δ δ	Δ α	Δ δ	Δ α	Δ δ	Δ α	Δ δ	Δ α	Δ δ	Δ α	Δ δ	Δ α	Δ δ	Δ α	Δ δ	Δ α	Δ δ	
h. m.	s.	″	s.	″	s.	″	s.	″	s.	″	s.	″	s.	″	s.	″	s.	″	s.	″	s.	′	h. m.
0 00	0.000	9 81	0.000	9.77	0.000	9.73	0.000	9.69	0.000	9.65	0.000	9.60	0.000	9.55	0.000	9.49	0.000	9.44	0.000	9.38	0.000	9.32	0 00
20	.060	9.77	.059	9.73	.058	9.69	.057	9 65	.056	9.61	.056	9.56	.055	9.51	.055	9.46	.054	9.40	.054	9.35	.053	9.29	20
40	.119	9.71	.017	9.68	.115	9.64	.113	9.60	.111	9.56	.110	9.51	.109	9 46	.108	9.41	.107	9.36	.106	9.31	.105	9.25	40
I 00	0.176	9.64	0 173	9.60	0.171	9 57	0.169	9.53	0.166	9.49	0.164	9.45	0.162	9.40	0.161	9.35	0.159	9.30	0 157	9.24	0 155	9.19	I 00
20	.2 2	9.53	.229	9.50	.225	9.46	.222	9.42	.220	9.38	.217	9.35	.214	9.31	.212	9.26	.210	9.20	.207	9 15	.204	9.10	20
40	.287	9.36	.283	9.33	.278	9.30	.275	9.27	.272	9 23	.269	9.20	.265	9.17	.262	9.11	.259	9.05	.255	9.00	.252	8.96	40
II 00	0.340	9.13	0.335	9.11	0.330	9.09	0.326	9 06	0.322	9.03	0.318	9.00	0.314	8.96	0.310	8.92	0.307	8.88	0.303	8.84	0.300	8 80	II 00
20	.389	8.89	.383	8.88	.378	8 86	.374	8.84	.369	8.81	.364	8.78	.359	8.75	355	8.72	.352	8.69	.349	8.65	.346	8.61	20
40	.436	8.63	.430	8.61	.424	8.60	.418	8.59	.413	8.57	.408	8.55	.403	8.52	.399	8.50	.394	8.48	.391	8.44	.387	8.40	40
III 00	0.480	8.34	0 473	8.33	0.467	8.32	0 461	8.31	0.455	8 30	0.449	8.29	0.444	8.27	0.439	8 25	0.434	8.23	0.429	8.20	0.425	8.17	III 00
20	.5 9	8.03	.512	8.03	.505	8.02	.499	8.01	.493	8.00	.487	7.99	.481	7.99	.475	7.98	.470	7.97	.465	7.96	.460	7.94	20
40	.555	7.68	.549	7.68	.542	7.69	.534	7 69	.527	7.68	.521	7.69	.514	7.69	.508	7 69	.502	7.69	.497	7.69	.492	7.68	40
IV 00	0.588	7.30	0.580	7.31	0.572	7.33	0.564	7.34	0.557	7.35	0.550	7.36	0 543	7.37	0.537	7.37	0.531	7.37	0.526	7.37	0 520	7.37	IV 00

	−30°.		−29°.		−28°.		−27°.		−26°.		−25°.		−24°.		−23°.		−22°.		−21°.		−20°.		
0 00	0.000	9.32	0.000	9 25	0.000	9.19	0.000	9.12	0.000	9.04	0.000	8.97	0.000	8.89	0.000	8.81	0.000	8.72	0.000	8.63	0.000	8.54	0 00
20	.053	9.29	.0 3	9.24	.052	9.16	.052	9 10	.050	9 02	.050	8.95	.049	8 87	.049	8.78	.049	8.71	.049	8.62	.049	8.53	20
40	.105	9.25	.104	9.19	.103	9.12	.101	9.06	.100	8.9[illegible]	.099	8.91	.098	8.84	.098	8.74	.098	8.67	.097	8.59	.097	8.50	40
I 00	0.155	9.19	0.154	9.12	0.153	9.06	0.151	8.99	0.149	8.93	0.148	8.86	0.147	8.78	0.146	8.70	0.145	8.62	0 144	8.54	0.143	8.46	I 00
20	.204	9.10	.203	9.02	.202	8.96	.200	8 90	.197	8.85	.196	8.78	.195	8.71	.194	8.63	.192	8.54	.190	8.47	.189	8.38	20
40	.252	8.96	.251	8.90	.2.9	8.84	.247	8.78	.244	8 73	.243	8.67	.241	8.60	.239	8 54	.237	8.44	.235	8.37	.234	8.29	40
II 00	0.300	8 80	0.297	8.75	0.295	8.69	0.292	8.64	0.289	8.58	0 287	8.52	0.285	8.46	0.282	8.40	0.281	8.33	0.278	8.26	0.277	8.19	II 00
20	.348	8.61	.342	8.57	.338	8.52	.335	8.47	.331	8 42	.329	8.37	.326	8.31	.324	8.25	.321	8.19	.319	8.12	.317	8.05	20
40	.387	8.40	.383	8.37	.378	8.33	.375	8.28	.371	8.23	.369	8.19	.366	8.14	.363	8.09	.360	8.03	.358	7.97	.355	7.91	40
III 00	0.425	8.17	0.421	8.15	0.417	8.12	0 413	8.08	0.409	8.04	0.406	8.00	0.403	7.96	0 400	7 91	0.397	7.87	0.394	7.82	0.391	7.77	III 00
20	.460	7.94	.456	7.91	.451	7 88	.447	7.86	.443	7 82	.440	7.79	.436	7.76	.433	7.72	.429	7.68	.426	7 64	.422	7.60	20
40	.492	7.68	.487	7.65	.482	7.63	.478	7.61	.474	7.59	.470	7.56	.466	7.54	.463	7.51	.459	7.48	.456	7.45	.452	7.42	40
IV 00	0.520	7.37	0.515	7.36	0.510	7.35	0.506	7.34	0 501	7.33	0.497	7.32	0.493	7.30	0.489	7.28	0.486	7.26	0.483	7 24	0.479	7.21	IV 00
20	.544	7.07	.539	7 07	.533	7.07	.529	7.07	.525	7.07	.520	7 07	.515	7.06	.512	7.05	.508	7.04	.50	7.03	.501	7.01	20
40	.564	6 75	.558	7.76	.552	6 78	.548	6.79	.544	6.79	.540	6.80	.535	6.81	.531	6.81	.526	6 81	.523	6.81	.520	6.80	40
V 00	0.581	6.43	0.575	6.45	0.569	6.47	0.564	6.49	0.559	6.51	0.554	6.52	0.550	6.54	0.546	6.55	0.542	6 56	0.538	6.56	0.535	6.57	V 00

	−20°.		−19°.		−18°.		−17°.		−16°.		−15°.		−14°.		−13°.		−12°.		−11°.		−10°.		
0 00	0.000	8.54	0.000	8 45	0.000	8.36	0.000	8.26	0.000	8.16	0.000	8.06	0.000	7.96	0.000	7 85	0.000	7.74	0.000	7.63	0.000	7.52	0 00
20	.049	8.53	.049	8.44	.049	8.35	.048	8 25	.048	8.55	.048	8.05	.047	7.95	.047	7.81	.047	7.73	.046	7.62	.046	7.51	20
40	.097	8.50	.096	8.41	.096	8.32	.096	8.23	.096	8.13	.095	8.03	.094	7.92	.093	7.82	.093	7.71	.092	7.60	.092	7.49	40
I 00	0.143	8.45	0.142	8.37	0.142	8.28	0.141	8.18	0.140	8 09	0.139	7.99	0.139	7.89	0.138	7.79	0.138	7.68	0.137	7.58	0.137	7.47	I 00
20	.189	8.38	.188	8.30	.187	8.21	.186	8.12	.186	8.03	.185	7.94	.184	7.84	.183	7.74	.182	7 64	.181	7.54	.180	7.43	20
40	.234	8.29	.233	8.21	.231	8.13	230	8.05	.229	7.96	.228	7.87	.227	7.78	.226	7.68	.225	7 59	.224	7.49	.223	7.39	40
II 00	0.277	8.19	0.275	8.11	0 274	8.03	0.272	7.96	0.271	7.89	0.269	7.79	0.268	7.70	0.267	7.61	0 266	7.52	0.265	7.43	0.264	7.33	II 00
20	317	8 05	.316	7.99	.314	7.92	.312	7.85	.311	7.77	.309	7 69	.308	7.61	.306	7.53	.305	7.44	.304	7.36	.303	7.27	20
40	.355	8.91	.354	7.85	.352	7.8[illegible]	.350	7.73	.349	7.65	.347	7.58	.315	7.50	.343	7.44	.342	7.36	.341	7.28	.340	7.20	40
III 00	0.391	7 77	0.389	7.71	0.387	7.65	0.385	7 59	0.383	7.53	0.381	7.47	0.379	7 40	0.378	7.34	0.376	7.26	0.375	7.19	0.373	7.12	III 00
20	.423	7.60	.422	7.55	.421	7.50	.419	7.45	.417	7.40	.414	7.34	.412	7.28	.409	7.22	.407	7.16	.406	7.09	.401	7.03	20
40	.452	7.42	.451	7.37	.450	7.33	.448	7.29	.445	7.25	.442	7.20	.440	7.15	.437	7.10	.435	7.05	.434	6.99	.432	6.93	40
IV 00	0.479	7.21	0.477	7.18	0.474	7.15	0.471	7.12	0 469	7.09	0.466	7.05	0.464	7.01	0.462	6.97	0.460	6.93	0.459	6.88	0.457	6.84	IV 00
20	.501	7.01	.493	6 99	.495	6.97	.493	6.95	.491	6.92	.488	6.90	.486	6.87	.484	6 83	.482	6.80	.480	6.77	.478	6.73	20
40	.520	6.80	.517	6.79	.513	6.78	.511	6 77	.509	6.76	.506	6.74	.504	6.72	.502	6.69	.500	6.67	.498	6.65	.496	6.62	40
V 00	0.535	6.57	0.531	6.57	0.528	6.57	0.525	6.57	0.523	6.57	0.520	6.56	0.518	6.56	0.516	6.55	0.514	6.53	0.512	6 52	0.510	6.50	V 00
20	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	.530	6.40	.528	6.40	.525	6.40	.522	6 40	.520	6.40	20
40	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	.532	6 25	.529	6.25	.527	6.27	.525	6.28	40
VI 00	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	0.531	6.09	0.532	6.12	0.530	6.14	0.528	6.15	VI 00

	−10°.		−9°.		−8°.		−7°.		−6°.		−5°.		−4°.		−3°.		−2°.		−1°.		0°.		
0 00	0.000	7.52	0.000	7.40	0.000	7.27	0.000	7.16	0.000	7.04	0.000	6.91	0.000	6 78	0.000	6.65	0.000	6.52	0.000	6.39	0.000	6 25	0 00
20	.046	7 51	.046	7.39	.045	7.26	.045	7.15	.045	7 03	.045	6.90	.045	6.78	.045	6.65	.045	6.52	.045	6 39	.045	6.25	20
40	.092	7.49	.092	7.38	091	7.25	.091	7.14	.091	7 02	.091	6.89	.090	6.77	.090	6.64	.090	6 51	.090	6.38	.090	6.25	40
I 00	0.137	7.47	0.136	7.36	0.136	7.24	0.136	7.13	0.136	7.01	0.135	6.89	0.135	6.76	0.135	6.64	0.135	6.51	0.135	6.38	0 135	6.25	I 00
20	.180	7.43	.180	7.32	.179	7.22	179	7.11	.178	7 00	.178	6.88	.177	6.75	.177	6 63	.177	6.51	.177	6.38	.177	6.25	20
40	.223	7.39	.223	7.28	.222	7.18	.221	7.08	.220	6.97	.220	6.86	.219	6.73	.219	6.62	.219	6.49	.219	6.37	.219	6.25	40
II 00	0.264	7.33	0.263	7.23	0.263	7.13	0.262	7.03	0.261	6.93	0.261	6 82	0.260	6.71	0.260	6.60	0.260	6.49	0.260	6 37	0.260	6.25	II 00
20	.303	7.27	.302	7.18	.301	7.08	.300	6 99	.299	6.90	.299	6 80	.298	6.69	.298	6.57	.297	6.48	.297	6.3[illegible]	297	6 25	20
40	.340	7.20	.339	7.11	337	7.02	.336	6.94	.335	6.86	.335	6.76	.331	6.63	.334	6.56	.333	6.46	.333	6 36	.333	6.25	40
III 00	0.373	7.12	0.372	7.04	0.371	6.96	0.371	6.88	0.370	6 80	0.369	6 71	0.369	6 62	0.368	6.53	0.368	6.44	0.368	6.35	0.368	6.25	III 00
20	.404	7 03	.403	6.96	.402	6.89	.401	6.82	.400	6 75	.400	6 67	.399	6.59	.399	6.51	.3[illegible]8	6.42	.398	6.34	.398	6.25	20
40	.432	6.95	.432	6.87	.430	6.81	.429	6.75	.428	6.69	.427	6.62	.426	6.55	.426	6.48	.425	6.41	.425	6.33	.425	6.25	40
IV 00	0.457	6 84	0.456	6.79	0.455	6.73	0.454	6 68	0.453	6.63	0.452	6.57	0.452	6.51	0.451	6 45	0.451	6.39	0.451	6.32	0.451	6.25	IV 00
20	.478	6.73	.477	6.69	.475	6 65	.474	6.61	.473	6.57	.471	6.52	.470	6 47	.470	6 42	.470	6.37	.470	6.31	.470	6.25	20
40	.496	6.62	.495	6.59	.493	6.56	.491	6 53	.490	6.50	.489	6.47	.489	6.43	.487	6.39	.487	6.34	.487	6 30	.487	6.25	40
V 00	0.510	6.50	0.509	6.49	0 507	6.47	0.506	6.45	0 505	6.43	0.504	6.41	0.504	6.38	0.503	6.35	0.503	6.32	0.503	6.29	0.503	6.25	V 00
20	.520	6.40	.519	6.37	.517	6.38	.515	6.37	.514	6.36	.513	6.35	.512	6.34	.512	6.32	512	6.30	.512	6 28	.512	6.25	20
40	.525	6 28	.523	6.26	.522	6 29	.520	6.29	519	6 29	.518	6.29	.518	6.29	.517	6.28	.517	6.27	.517	6.26	.517	6.25	40
VI 00	0.528	6.15	0.526	6.17	0.525	6.19	0.524	6.21	0.523	6.22	0.522	6.23	0.521	6.24	0.521	6.24	0 520	6.25	0.520	6.25	0.520	6.25	VI 00

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Hour angle.	0°.		+1°.		+2°.		+3°.		+4°.		+5°.		+6°.		+7°.		+8°.		+9°.		+10°.		Hour angle.
	Δ α	Δ δ	Δ α	Δ δ	Δ α	Δ δ	Δ α	Δ δ	Δ α	Δ δ	Δ α	Δ δ	Δ α	Δ δ	Δ α	Δ δ	Δ α	Δ δ	Δ α	Δ δ	Δ α	Δ δ	
h. m.	s.	″	s.	″	s.	″	s.	″	s.	″	s.	″	s.	′	s.	″	s.	″	s.	″	s.	″	h. m.
0 00	0.000	6.25	0.000	6.12	0.000	5.98	0.000	5.84	0.000	5.69	0.000	5.55	0.000	5.41	0.000	5.26	0.000	5.11	0.000	4.96	0.000	4.81	0 00
20	.045	6.25	.045	6.12	.045	5.98	.045	5.84	.045	5.69	.045	5.55	.045	5.41	.046	5.26	.046	5.11	.046	4.96	.046	4.82	20
40	.090	6.25	.090	6.12	.090	5.98	.090	5.84	.090	5.70	.090	5.56	.090	5.42	.091	5.27	.091	5.12	.092	4.97	.092	4.83	40
I 00	0.135	6.25	0.135	6.12	0.135	5.99	0.135	5.85	0.135	5.71	0.135	5.57	0.135	5.43	0.136	5.29	0.136	5.14	0.137	5.00	0.137	4.85	I 00
20	.177	6.25	.178	6.12	.178	5.99	.178	5.85	.178	5.73	.179	5.59	.179	5.46	.180	5.32	.180	5.17	.180	5.03	.181	4.89	20
40	.219	6.25	.220	6.13	.220	6.00	.220	5.87	.221	5.75	.221	5.61	.221	5.48	.222	5.35	.222	5.21	.223	5.07	.223	4.93	40
II 00	0.260	6.25	0.260	6.13	0.260	6.01	0.260	5.89	0.261	5.77	0.261	5.64	0.262	5.51	0.262	5.38	0.263	5.25	0.263	5.12	0.264	4.98	II 00
20	.297	6.25	.298	6.14	.298	6.02	.298	5.91	.299	5.79	.299	5.67	.300	5.55	.300	5.41	.301	5.30	.302	5.17	.303	5.04	20
40	.333	6.25	.334	6.15	.334	6.04	.334	5.93	.335	5.82	.335	5.71	.336	5.59	.336	5.46	.337	5.36	.338	5.23	.339	5.11	40
III 00	0.368	6.25	0.368	6.16	0.368	6.06	0.368	5.96	0.369	5.85	0.369	5.75	0.370	5.64	0.371	5.53	0.372	5.42	0.372	5.31	0.373	5.20	III 00
20	.398	6.25	.398	6.16	.398	6.08	.398	5.98	.399	5.88	.399	5.79	.400	5.69	.401	5.59	.402	5.49	.403	5.39	.404	5.29	20
40	.425	6.25	.426	6.17	.426	6.10	.426	6.01	.427	5.92	.427	5.84	.428	5.75	.429	5.66	.430	5.57	.431	5.48	.432	5.38	40
IV 00	0.451	6.25	0.451	6.18	0.451	6.11	0.451	6.04	0.452	5.97	0.452	5.89	0.453	5.81	0.454	5.73	0.455	5.65	0.456	5.57	0.457	5.48	IV 00
20	.470	6.25	.471	6.19	.471	6.13	.471	6.07	.472	6.02	.473	5.94	.473	5.87	.474	5.80	.475	5.73	.476	5.66	.477	5.58	20
40	.487	6.25	.488	6.20	.488	6.15	.488	6.10	.489	6.05	.489	5.99	.490	5.94	.490	5.88	.491	5.82	.492	5.76	.493	5.69	40
V 00	0.503	6.25	0.503	6.22	0.503	6.18	0.503	6.14	0.504	6.10	0.504	6.05	0.505	6.00	0.506	5.96	0.507	5.91	0.509	5.86	0.510	5.81	V 00
20	.512	6.25	.513	6.23	.513	6.20	.513	6.17	.514	6.15	.514	6.11	.515	6.07	.516	6.04	.517	5.99	.518	5.97	.520	5.93	20
40	.517	6.25	.518	6.24	.518	6.22	.519	6.20	.519	6.19	.519	6.17	.520	6.14	.521	6.12	.522	6.08	.523	6.08	.525	6.04	40
VI 00	0.520	6.25	0.520	6.25	0.520	6.25	0.521	6.24	0.521	6.24	0.522	6.23	0.523	6.22	0.524	6.21	0.525	6.19	0.526	6.18	0.528	6.16	VI 00
20	. .	. .	. .	. .	. .	. .	. .	. .	.519	6.29	.519	6.29	.520	6.29	.521	6.30	.522	6.29	.523	6.29	.525	6.28	20
40	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	.515	6.38	.516	6.40	.517	6.39	.518	6.39	.520	6.39	40
VII 00	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	0.507	6.49	0.509	6.50	0.510	6.51	VII 00

	+10°.		+11°.		+12°.		+13°.		+14°.		+15°.		+16°.		+17°.		+18°.		+19°.		+20°.		
0 00	0.000	4.81	0.000	4.65	0.000	4.49	0.000	4.34	0.000	4.18	0.000	4.02	0.000	3.87	0.000	3.70	0.000	3.54	0.000	3.37	0.000	3.21	0 00
20	.046	4.82	.046	4.66	.046	4.51	.046	4.36	.046	4.20	.047	4.04	.047	3.88	.047	3.73	.047	3.57	.047	3.40	.048	3.24	20
40	.092	4.83	.092	4.67	.092	4.53	.092	4.38	.092	4.22	.093	4.06	.093	3.90	.094	3.76	.095	3.59	.095	3.43	.096	3.27	40
I 00	0.137	4.85	0.137	4.70	0.138	4.55	0.138	4.40	0.139	4.24	0.139	4.09	0.140	3.93	0.140	3.79	0.141	3.62	0.141	3.46	0.142	3.29	I 00
20	.181	4.89	.181	4.74	.182	4.59	.183	4.44	.184	4.29	.184	4.14	.185	3.98	.186	3.84	.187	3.68	.188	3.52	.189	3.36	20
40	.223	4.93	.223	4.79	.224	4.65	.225	4.49	.226	4.35	.228	4.20	.228	4.05	.229	3.90	.231	3.76	.232	3.60	.233	3.44	40
II 00	0.264	4.98	0.265	4.85	0.266	4.71	0.267	4.57	0.268	4.43	0.269	4.29	0.270	4.15	0.271	4.00	0.273	3.86	0.275	3.71	0.277	3.56	II 00
20	.303	5.04	.304	4.91	.305	4.78	.308	4.65	.309	4.52	.310	4.39	.311	4.25	.312	4.11	.313	3.97	.315	3.83	.317	3.68	20
40	.339	5.11	.341	4.99	.342	4.87	.343	4.74	.345	4.62	.347	4.49	.348	4.36	.350	4.23	.352	4.10	.354	3.97	.356	3.83	40
III 00	0.373	5.20	0.375	5.09	0.376	4.97	0.377	4.85	0.379	4.73	0.381	4.61	0.383	4.49	0.385	4.37	0.387	4.24	0.389	4.11	0.391	3.94	III 00
20	.404	5.29	.405	5.19	.406	5.07	.407	4.96	.409	4.84	.411	4.74	.413	4.64	.416	4.52	.419	4.39	.421	4.27	.424	4.15	20
40	.432	5.38	.433	5.29	.434	5.18	.435	5.08	.437	4.86	.439	4.88	.441	4.78	.444	4.67	.447	4.55	.450	4.25	.453	4.33	40
IV 00	0.457	5.48	0.459	5.39	0.461	5.30	0.462	5.21	0.464	5.12	0.466	5.03	0.469	4.94	0.471	4.84	0.474	4.74	0.477	4.64	0.479	4.54	IV 00
20	.477	5.58	.480	5.50	.484	5.43	.485	5.36	.487	5.28	.489	5.18	.491	5.10	.493	5.01	.495	4.93	.498	4.83	.501	4.74	20
40	.493	5.69	.498	5.62	503	5.56	.504	5.50	.506	5.43	.507	5.34	.509	5.27	.511	5.19	.513	5.12	.516	5.03	.519	4.95	40
V 00	0.510	5.81	0.512	5.75	0.514	5.70	0.516	5.64	0.518	5.58	0.520	5.52	0.523	5.47	0.525	5.39	0.528	5.32	0.531	5.25	0.535	5.18	V 00
20	.520	5.93	.522	5.88	.524	5.84	.526	5.81	.528	5.74	.530	5.69	.533	5.66	.535	5.59	.538	5.53	.542	5.47	.546	5.40	20
40	.525	6.04	.527	6.01	.529	5.98	.531	5.97	.533	5.90	.535	5.86	.538	5.83	.540	5.78	.543	5.74	.547	5.60	.551	5.65	40
VI 00	0.528	6.16	0.530	6.14	0.532	6.12	0.534	6.10	0.536	6.07	0.538	6.04	0.541	6.01	0.514	5.98	0.547	5.95	0.550	5.92	0.554	5.88	VI 00
20	.525	6.28	.527	6.27	.529	6.26	.531	6.24	.533	6.24	.535	6.22	.538	6.20	.540	6.18	.543	6.16	.547	6.14	.551	6.11	20
40	.520	6.39	.522	6.40	.524	6.30	.526	6.39	.528	6.40	.530	6.39	.533	6.38	.535	6.37	.538	6.36	.542	6.35	.546	6.34	40
VII 00	0.510	6.51	0.512	6.52	0.514	6.54	0.516	6.55	0.518	6.56	0.520	6.56	0.523	6.57	0.525	6.57	0.528	6.57	0.531	6.57	0.535	6.57	VII 00

	+20°.		+21°.		+22°.		+23°.		+24°.		+25°.		+26°.		+27°.		+28°.		+29°.		+30°.		
0 00	0.000	3.21	0.000	3.04	0.000	2.87	0.000	2.71	0.000	2.54	0.000	2.37	0.000	2.20	0.000	2.03	0.000	1.86	0.000	1.69	0.000	1.51	0 00
20	.048	3.24	.048	3.06	.049	2.89	.049	2.73	.050	2.56	.050	2.39	.050	2.21	.051	2.05	.051	1.88	.052	1.70	.052	1.53	20
40	.096	3.27	.097	3.08	.097	2.92	.098	2.75	.099	2.58	.100	2.41	.101	2.25	.101	2.08	.102	1.91	.103	1.74	.104	1.57	40
I 00	0.142	3.29	0.143	3.14	0.144	2.98	0.146	2.82	0.147	2.64	0.149	2.48	0.150	2.32	0.151	2.15	0.153	1.98	0.154	1.82	0.155	1.65	I 00
20	.189	3.36	.191	3.20	.192	3.04	.193	2.89	.194	2.73	.195	2.56	.198	2.41	.200	2.24	.201	2.08	.2 3	1.91	.205	1.75	20
40	.233	3.44	.235	3.29	.237	3.14	.240	2.98	.241	2.83	.242	2.67	.244	2.52	.246	2.35	.249	2.20	.251	2.04	.254	1.88	40
II 00	0.277	3.56	0.279	3.42	0.281	3.26	0.283	3.12	0.285	2.96	0.287	2.80	0.290	2.66	0.292	2.50	0.291	2.35	0.297	2.19	0.300	2.04	II 00
20	.317	3.68	.319	3.54	.321	3.39	.323	3.26	.326	3.11	.328	2.96	.331	2.82	.334	2.67	.337	2.52	.341	2.37	.345	2.22	20
40	.356	3.83	.358	3.69	.361	3.56	.364	3.43	.366	3.30	.369	3.17	.372	3.00	.375	2.86	.378	2.72	.382	2.57	.386	2.43	40
III 00	0.391	3.94	0.393	3.82	0.395	3.72	0.397	3.60	0.399	3.47	0.403	3.34	0.408	3.20	0.413	3.07	0.417	2.93	0.421	2.79	0.425	2.66	III 00
20	.424	4.15	.427	4.01	.430	3.89	.433	3.77	.436	3.65	.440	3.54	.444	3.44	.448	3.31	.452	3.17	.456	3.04	.460	2.91	20
40	.453	4.33	.457	4.21	.460	4.11	.463	3.98	.466	3.88	.470	3.79	.474	3.68	.478	3.55	.482	3.41	.487	3.30	.492	3.18	40
IV 00	0.479	4.54	0.483	4.44	0.485	4.34	0.489	4.23	0.494	4.13	0.497	4.02	0.501	3.92	0.506	3.80	0.510	3.66	0.515	3.58	0.520	3.46	IV 00
20	.501	4.74	.505	4.65	.507	4.57	.511	4.47	.516	4.36	.519	4.26	.522	4.16	.528	4.07	.534	3.97	.539	3.87	.544	3.77	20
40	.519	4.95	.523	4.88	.526	4.80	.530	4.72	.534	4.62	.539	4.51	.544	4.43	.549	4.35	.554	4.27	559	4.18	.565	4.08	40
V 00	0.535	5.18	0.538	5.11	0.542	5.04	0.546	4.97	0.550	4.89	0.554	4.81	0.559	4.74	0.564	4.66	0.569	4.58	0.574	4.49	0.580	4.41	V 00
20	.546	5.42	.549	5.34	.553	5.29	.557	5.23	.561	5.16	.565	5.10	.570	5.04	.575	4.96	.580	4.89	.586	4.81	.592	4.74	20
40	.551	5.65	.555	5.60	.559	5.54	.563	5.48	.567	5.43	.571	5.38	.576	5.33	.581	5.27	.586	4.20	.593	5.14	.598	5.08	40
VI 00	0.554	5.88	0.557	5.84	0.561	5.80	0.566	5.76	0.570	5.71	0.574	5.67	0.579	5.62	0.584	5.57	0.589	5.52	0.595	5.47	0.601	5.42	VI 00
20	.551	6.11	.555	6.09	.559	6.06	.563	6.03	.567	5.99	.571	5.95	.576	5.92	.581	5.88	.586	5.84	.593	5.80	.598	5.76	20
40	.546	6.34	.549	6.33	.553	6.31	.557	6.29	.561	6.26	.565	6.23	.570	6.21	.575	6.18	.580	6.15	.586	6.12	.592	6.09	40
VII 00	0.535	6.57	0.538	6.56	0.542	6.56	0.546	6.55	0.550	6.53	0.554	6.51	0.559	6.51	0.564	6.49	0.569	6.47	0.574	6.45	0.580	6.43	VII 00
20	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	539	6.80	.544	6.79	.549	6.78	.554	6.77	.559	6.76	.565	6.75	20
40	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	.534	7.07	.539	7.07	.544	7.06	40
VIII 00	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	VIII 00

Hosted by Google

Hour angle.	+30°.		+31°.		+32°.		+33°.		+34°.		+35°.		+36°.		+37°.		+38°.		+39°.		+40°.		Hour angle.
	Δ α	Δ δ	Δ α	Δ δ	Δ α	Δ δ	Δ α	Δ δ	Δ α	Δ δ	Δ α	Δ δ	Δ α	Δ δ	Δ α	Δ δ	Δ α	Δ δ	Δ α	Δ δ	Δ α	Δ δ	
h. m.	s.	″	s.	″	s.	″	s.	″	s.	″	s.	″	s.	″	s.	″	s.	″	s.	″	s.	″	h. m.
0 00	0.000	1.51	0.000	1.34	0.000	1.17	0.000	1.00	0.000	0.83	0.000	0.65	0.000	0.48	0.000	0.30	0.000	0.13	0.000	−0.05	0.000	−0.22*	0 00
20	.052	1.54	.053	1 37	.053	1 20	.054	1.03	.055	0.86	.055	0.68	.056	0 51	.057	0.33	.058	0.16	.058	−0.02	.059	0.19	20
40	.104	1.57	.105	1.42	.106	1.24	.108	1.07	.109	0.90	.110	0.73	.111	0 55	.113	0.38	.115	0.21	.117	0.04	.118	0.13	40
I 00	0.155	1.65	0.157	1.48	0.159	1.31	0.161	1.14	0.163	0.97	0.164	0.80	0.166	0.63	0 169	0.46	0.171	0.29	0.173	0.12	0.176	−0.05	I 00
20	.205	1.75	.207	1.58	.209	1.40	.212	1.24	.215	1.07	.217	0.91	.220	0.73	.224	0.57	.226	0.40	.228	0.24	.232	0.06	20
40	.254	1.88	.256	1.72	.259	1.54	.262	1.39	.265	1.22	.268	1 06	.272	0.88	.276	0.73	.279	0.56	.282	0.40	.287	0.24	40
II 00	0.300	2.04	0.303	1.88	0.307	1.72	0.310	1.56	0.314	1.40	0.318	1.25	0.322	1.09	0.326	0.93	0.330	0.77	0.335	0.61	0.340	0.45	II 00
20	.345	2.22	.348	2.06	.352	1.92	.356	1.76	.360	1.61	.364	1.46	.369	1.31	.373	1.15	.378	1.00	.383	0.84	.389	0.68	20
40	.386	2.43	.390	2.27	.394	2.13	.398	1.99	.403	1.85	.408	1.70	.413	1.55	.419	1.40	.425	1.25	.429	1.10	.434	0.94	40
III 00	0.425	2.66	0.429	2 52	0.434	2.36	0.439	2.24	0.444	2.11	0.449	1.96	0 454	1.82	0.461	1.68	0.467	1.54	0.473	1.39	0.480	1.24	III 00
20	.460	2.91	.465	2 78	.470	2.62	.475	2.51	.480	2.39	.485	2.24	.491	2.11	.498	1.98	.505	1.85	.512	1.70	.520	1.56	20
40	.492	3.18	.497	3.06	.502	2.91	.507	2.80	.513	2.69	.519	2 55	.526	2.43	.533	2.31	.540	2.18	.547	2.04	.555	1.90	40
IV 00	0.520	3.46	0.526	3.35	0.531	3.24	0.537	3.12	0.543	3.00	0.550	2.89	0.557	2.77	0.564	2.65	0.572	2.53	0.580	2.41	0.588	2.28	IV 00
20	.544	3.77	.550	3.66	.556	3.57	.562	3.45	.569	3.34	.576	3.24	.583	3.12	.591	3.01	.598	2.90	.607	2.79	.616	2.67	20
40	.565	4.08	.571	3.98	.577	3.90	.583	3.79	.590	3.69	.597	3.59	.604	3.48	.612	3.39	.620	3.28	.629	3.18	.638	3.07	40
V 00	0.580	4.41	0.586	4.32	0.592	4 33	0.599	4.14	0.606	4.05	0.613	3.96	0.621	3.87	0.629	3.78	0.638	3.69	0.647	3.59	0.656	3.49	V 00
20	.592	4.74	.598	4.64	.604	4.57	.611	4.49	.618	4.42	.625	4.34	.633	4.26	.641	4.17	.650	4.10	.659	4.00	.668	3 91	20
40	.598	5.08	.604	4.99	.611	4.93	.618	4.86	.625	4 80	.632	4.73	.640	4.66	.648	4.58	.658	4.51	.667	4.42	.677	4.35	40
VI 00	0.601	5.42	0.607	5.36	0.613	5.30	0.620	5 24	0.627	5.18	0.635	5.12	0.643	5.06	0.651	5.00	0.660	4.93	0.669	4.86	0.679	4.79	VI 00
20	.598	5.76	.604	5.71	.611	5.66	.618	5.61	.625	5.56	.632	5.51	.640	5.46	.648	5 41	.658	5.35	.667	5.29	.677	5.22	20
40	.592	6.09	.598	6.05	.604	6.01	.611	5.98	.618	5.94	.625	5.90	.633	5.86	.641	5.81	.650	5.76	.659	5.71	.668	5.65	40
VII 00	0.580	6.43	0.586	6.39	0.592	6.36	0.599	6.34	0.606	6.31	0.613	6.28	0.621	6.25	0.629	6.21	0.6 8	6.17	0.647	6.13	0.656	6.08	VII 00
20	.565	6.75	.571	6.72	.577	6.71	.583	6.70	.590	6.68	.597	6.66	.604	6 63	.612	6.60	.620	6.57	.629	6.54	.638	6.50	20
40	.544	7.06	.550	7.04	.556	7.04	.562	7.04	.569	7.03	.576	7.02	.583	7.00	.591	6.98	.598	6.96	.607	6.93	.616	6.90	40
VIII 00	. .	. .	. .	. .	0.531	7.37	0.537	7.37	0.543	7.36	0.550	7.36	0.557	7.35	0.564	7.34	0.572	7.33	0.580	7.32	0.588	7 30	VIII 00
20	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	.526	7.69	.533	7.68	.540	7.68	.547	7.67	.555	7.66	20
40	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	.512	8.02	.520	8.01	40

	+40°.		+41°.		+42°.		+43°.		+44°.		+45°.		+46°.		+47°.		+48°.		+49°.		+50°.		
0 00	0.000	−0.22*	0.000	−0.40	0.000	−0.57	0.000	−0 75	0.000	−0.92	0.000	−1.09	0.000	−1.26	0.000	−1.44	0.000	−1.61	0.000	−1.79	0.000	−1.97	0 00
20	.059	0.19	.060	0.36	.061	0.54	.062	0.72	.063	0.89	.064	1.06	.065	1.23	.066	1.40	.067	1.57	.069	1.75	.070	1.92	20
40	.118	0.13	.119	0.31	.121	0.48	.123	0.66	.125	0.83	.127	1.00	.129	1.17	.031	1.34	.134	1.50	.137	1.69	.140	1.85	40
I 00	0.176	−0.05	0.178	0.23	0.181	0 40	0.184	0 57	0.187	0.74	0.190	0.91	0.193	1.08	0.197	1.25	0.201	1.42	0.205	1.59	0.209	1.76	I 00
20	.232	0.06	.235	−0.10	.239	0.27	.243	0.43	.247	0.60	.251	0.76	.255	0.93	.260	1.10	.266	1.28	.271	1.45	.276	1.61	20
40	.287	0.24	.291	0.07	.295	−0.09	.300	0 25	.305	0.42	.310	0.58	.315	0.75	.321	0.91	.329	1.09	.335	1.25	.341	1.41	40
II 00	0.340	0.45	0.345	0.29	0.350	0.13	0.356	−0.03	0.362	−0.19	0.368	0.36	0.374	0.52	0.381	0 68	0.389	0.84	0.397	1.00	0.405	1.16	II 00
20	.389	0.68	.395	0.53	.401	0 38	.408	0.22	.415	0.06	.422	−0.11	.428	−0.26	.437	0.41	.446	0.56	.455	0.71	.463	0.86	20
40	.434	0.94	.442	0.80	.449	0.65	.457	0.50	.464	0.34	.473	0.18	.480	0.04	.491	−0.11	.500	−0.23	.510	−0.36	.519	0.48	40
III 00	0.480	1.24	0.487	1.10	0.495	0.96	0.503	0.81	0.511	0.67	0.520	0.52	0.529	0.38	0.539	0.23	0.550	0.15	0.561	0.06	0.572	−0.03	III 00
20	.520	1.56	.525	1.43	.536	1.29	.546	1.14	.555	1.01	.564	0.87	.574	0.75	.584	0.60	.596	0.52	.608	0.42	.620	0.30	20
40	.555	1.90	.562	1.78	.573	1.65	.583	1.51	.593	1.38	.603	1.25	.614	1 13	.624	1.00	.638	0.90	.650	0.79	.663	0.65	40
IV 00	0.588	2.28	0.596	2.16	0.606	2.04	0.616	1.91	0.626	1.79	0.637	1.66	0.649	1.54	0.661	1 41	0.674	1.29	0.687	1.16	0.701	1.03	IV 00
20	.616	2.67	.625	2.55	.634	2.44	.645	2 32	.656	2.20	.667	2 08	.679	1.97	691	1.84	.704	1.73	.719	1.61	.733	1.49	20
40	.638	3.07	.649	2.96	.658	2.86	.669	2.75	.680	2.64	.691	2.52	.703	2.41	.716	2.30	.729	2.19	.744	2.08	.759	1.97	40
V 00	0.656	3.49	0.667	3.39	0.676	3 30	0.687	3 20	0.698	3.10	0.710	2.99	0.723	2.89	0.737	2.79	0.751	2.69	0.766	2.58	0.782	2.47	V 00
20	.668	3.91	.680	3.82	.689	3.74	.701	3.66	.713	3.56	.725	3 46	.738	3.37	.751	3.28	.765	2.99	.781	2.88	.797	2.98	20
40	.677	4.35	.688	4.26	.697	4.19	.709	4.12	.721	4.13	.733	3 94	.747	3.85	.760	3.77	.774	3.29	789	3 18	.806	3.50	40
VI 00	0.679	4.79	0.689	4 72	0.700	4.65	0.712	4.58	0.724	4.50	0.736	4.42	0.749	4.34	0.763	4.26	0.778	4.18	0.793	4.10	0.809	4.02	VI 00
20	.677	5.22	.688	5.16	.697	5.10	.709	5.03	.721	4.97	.733	4.90	.747	4.83	.760	4.75	.774	4.67	.789	4.59	.806	4.51	20
40	.668	5.65	.680	5.60	.689	5.55	.701	5.50	.713	5.44	.725	5.38	.738	5.32	.751	5.24	.765	5.17	.781	5.10	.797	4.99	40
VII 00	0.656	6.08	0.667	6.04	0.676	6.00	0.687	5 95	0.698	5 90	0 710	5.85	0.723	5.80	0.737	5.74	0 751	5.69	0.766	5.63	0.782	5.47	VII 00
20	.638	6.50	.649	6.46	.658	6 43	.669	6.39	.680	6.35	.691	6.31	.703	6 26	.716	6.21	.729	6.17	.744	6.09	.759	5.98	20
40	.616	6.90	.625	6.87	.634	6.85	.645	6.82	.656	6.79	.667	6.75	.679	6.71	.691	6.67	.704	6.64	.719	6.57	.733	6.50	40
VIII 00	0.589	7.30	0 596	7.28	0.606	7.26	0.616	7.24	0.626	7.21	0.637	7.18	0.649	7.15	0.661	7.12	0.674	7.09	0.687	7 05	0.701	7.01	VIII 00
20	.557	7.66	.562	7.65	.573	7.64	.583	7.63	.593	7.61	.603	7.59	.614	7.55	.624	7.53	.638	7.51	.650	7 43	.663	7.45	20
40	.522	8.01	.525	8.00	.536	8.00	.546	7.99	.555	7.98	.564	7.97	.574	7.93	.584	7.92	.596	7.91	.608	7 98	.620	7.87	40
IX 00	. .	. .	0.487	8.34	0.495	8.34	0.503	8.34	0.511	8.33	0.520	8.33	0.529	8.32	0.539	8.31	0.550	8.30	0.561	8.28	0.572	8.26	IX 00
20	. .	. .	.442	8.64	.449	8.65	.457	8.65	.464	8.65	.473	8.65	.480	8.65	.491	8.64	.500	8.64	.510	8.63	.519	8.62	20
40	. .	. .	.395	8 91	.401	8.92	.408	8.93	.415	8.94	.422	8.94	.428	8.95	.437	8.95	.446	8.95	.455	8.94	.463	8.94	40
X 00	. .	. .	0.345	9.15	0.350	9.17	0.356	9.18	0.362	9 19	0.368	9.20	0.374	9.20	0.381	9.21	0.389	9.21	0.397	9.20	0.405	9.20	X 00
20	. .	. .	.291	9.35	.295	9.37	.300	9 39	.305	9.40	.310	9.42	.315	9.43	.321	9.44	.329	9.44	.335	9.45	.341	9.45	20
40	. .	. .	.235	9.52	.239	9.54	.243	9 57	.247	9.58	.251	9.60	.255	9.62	.260	9.63	.266	9 63	.271	9.64	.276	9.64	40
XI 00	. .	. .	0.178	9.66	0.181	9.68	0.184	9.71	0.187	9.73	0.190	9.75	0.193	9.77	0.197	9.78	0.201	9.78	0.205	9.79	0.209	9.80	XI 00

* Where two negative signs occur in the column Δδ, the quantities between them are also negative.

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Hour angle.	+50°.		+51°.		+52°.		+53°.		+54°.		+55°.		+56°.		+57°.		+58°.		+59°.		+60°.		Hour angle.
	Δα	Δδ	Δα	Δδ	Δα	Δδ	Δα	Δδ	Δα	Δδ	Δα	Δδ	Δα	Δδ	Δα	Δδ	Δα	Δδ	Δα	Δδ	Δα	Δδ	
h. m.	s.	″	s.	″	s.	″	s.	″	s.	′	s.	″	s.	″	s	″	s.	″	s.	″	s.	″	h. m.
0 00	0.000	−1.97	0.000	−2.13	0.000	−2.30	0.000	−2.48	0.000	−2.64	0.000	−2.80	0.000	−2.97	0.000	−3.14	0.000	−3 30	0.000	−3.46	0.000	−3.62	0 00
20	.070	1.92	.072	2 09	.073	2.27	.075	2.44	.077	2.60	.079	2.76	.081	2.93	.083	3 11	.085	3.25	.088	3 42	.091	3.58	20
40	.140	1.85	.143	2.02	.146	2.21	.150	2.37	.153	2.53	.157	2.69	.161	2.85	.165	3.03	.170	3.18	.175	3.37	.181	3.52	40
I 00	0.209	1.76	0 214	1.92	0.219	2.09	0.224	2.26	0.229	2.42	0.235	2.59	0.241	2.75	0.247	2.92	0.254	3.08	0.261	3.24	0 268	3 40	I 00
20	.276	1.61	.282	1.79	.289	1.95	.294	2.11	.301	2.26	.309	2.42	.317	2.58	.326	2.75	.335	2.90	.344	3.06	.354	3.21	20
40	.341	1.41	.349	1.60	.357	1.74	.364	1.90	.372	2.04	.382	2.20	.392	2.36	.404	2.52	.414	2.67	.426	2.84	.438	2.98	40
II 00	0.405	1.16	0.413	1.35	0.422	1.49	0.432	1.63	0.442	1.78	0.453	1 93	0.465	2.09	0.478	2 26	0.491	2.42	0.505	2.57	0.519	2.72	II 00
20	.463	0.86	.472	1.07	.483	1.21	.495	1.34	.507	1.49	.519	1.64	.533	1.79	.547	1.96	.562	2.12	.578	2.27	.595	2.41	20
40	.519	0.48	.529	0.77	.542	0.91	.555	1.03	.568	1.15	.582	1.30	.597	1.43	.613	1.61	.635	1.77	.648	1.92	.667	2.06	40
III 00	0.572	−0.03	0.584	−0.35	0 597	0.49	0.611	0.64	0.626	0.78	0.641	0.93	0.657	1.07	0.675	1.22	0.694	1.36	0.714	1.51	0.736	1.66	III 00
20	.620	0.30	.633	0.06	.647	−0 07	.662	−0.23	.678	−0.37	.694	0.52	.710	0.65	.731	0.80	.750	0.93	.774	1.08	.796	1.23	20
40	.663	0.65	.677	0.48	.692	0.35	.708	0.20	.724	0.06	.742	−0.08	.759	−0.20	.782	−0.35	.802	−0.48	.827	0.62	.851	0.76	40
IV 00	0.701	1.03	0.716	0.90	0.732	0.78	0 749	0.65	0.767	0.52	0.785	0.39	0.805	0.27	0.827	0.14	0.850	0.01	0.875	−0.12	0.901	−0.25	IV 00
20	.733	1.49	.749	1.35	.764	1.24	.783	1.12	.802	1.00	.820	0.88	.842	0.76	.865	0.64	.890	0.52	.915	0.40	.943	0.27	20
40	.759	1.97	.775	1 84	.791	1.73	.811	1.62	.830	1.51	.850	1.39	.873	1 28	.897	1.16	.922	1.05	.948	0.93	.977	0.82	40
V 00	0.782	2.47	0.796	2.37	0.815	2.26	0.835	2.15	0.855	2.04	0.876	1 93	0.899	1.82	0.923	1.71	0.949	1.60	0.976	1.49	1.005	1.38	V 00
20	.797	2.98	.810	2.89	.829	2.79	.850	2.69	.871	2.58	.892	2.48	.915	2.37	.940	2.27	.966	2.16	.993	2.05	1.023	1 95	20
40	.806	3.50	.820	3.41	.839	3.32	.859	3.23	.880	3.13	.902	3.03	.924	2.93	.946	2.84	.975	2.73	1.003	2.63	1.033	2.53	40
VI 00	0.809	4.02	0.827	3.94	0.845	3.85	0.864	3.76	0.885	3.68	0.907	3.59	0.930	3 50	0.955	3.41	0.982	3.32	1.010	3.22	1.039	3.12	VI 00
20	.806	4.51	.820	4.47	.839	4.38	.859	4.30	.880	4.22	.902	4.14	.924	4.06	.946	3.98	.975	3.90	1.003	3.80	1.033	3.71	20
40	.797	4.99	.810	4.99	.829	4.92	.850	4.84	.871	4.76	.892	4.69	.915	4.62	.940	4.54	.966	4.48	0.993	4.38	1.023	4.29	40
VII 00	0.782	5.47	0.796	5.51	0.815	5.45	0.835	5.38	0.855	5.31	0.876	5.24	0.899	5.17	0.923	5.10	0.949	5 03	0 976	4 95	1.005	4.87	VII 00
20	.759	5.98	.775	6.01	.791	5.95	.811	5.90	.830	5.84	.850	5.77	.873	5 71	.897	5.65	.922	5.57	.948	5.51	0.977	5.44	20
40	.733	6.50	.749	6.50	.764	6.45	.783	6.40	.802	6.35	.820	6.29	.842	6.24	.865	6.18	.890	6.10	.915	6.04	.943	5.98	40
VIII 00	0.701	7.01	0.716	6.97	0.732	6.93	0.749	6.88	0.767	6.83	0.785	6.78	0.805	6.73	0.827	6.68	0.850	6.62	0.875	6.56	0.901	6.50	VIII 00
20	.663	7.45	.677	7.41	.692	7.38	.708	7.33	.724	7.29	.742	7.24	.759	7.20	782	7.15	.802	7.10	.827	7.05	.851	7.00	20
40	.620	7.87	.633	7.83	.647	7.81	.662	7.76	.678	7.72	.694	7.68	.710	7.64	.731	7.60	.750	7.56	.774	7.51	.796	7.46	40
IX 00	0.572	8.26	0.584	8.22	0.597	8.20	0.611	8.17	0.626	8.14	0.641	8.11	0.657	8.07	0.675	8 03	0.694	7.99	0.714	7.95	0.736	7.91	IX 00
20	.519	8.62	.529	8.58	.542	8.56	.555	8.54	.568	8.51	.582	8.48	.597	8 45	.613	8.42	.635	8.39	.648	8.36	.667	8.32	20
40	.463	8.94	.472	8.91	.483	8.90	.495	8.88	.507	8.85	.519	8.82	.533	8.79	.547	8.77	.562	8.74	.578	8.71	.595	8.68	40
X 00	0.405	9.20	0.413	9.19	0.422	9.18	0.432	9.16	0.442	9.14	0.453	9.13	0.465	9.10	0.478	9.07	0.491	9 04	0.505	9.01	0.519	8 98	X 00
20	.341	9.45	.349	9.43	.357	9.41	.364	9.40	.372	9.39	.382	9.38	.392	9.36	.404	9.34	.414	9 31	.426	9.28	.438	9.27	20
40	.276	9.64	.282	9.63	.289	9.62	.294	9.60	.301	9.59	.309	9.58	.317	9.56	.326	9.55	.335	9.52	.344	9.50	.354	9.47	40
XI 00	0.209	9.80	0.214	9.80	0.219	9.79	0.224	9.78	0.229	9.78	0.235	9.76	0.241	9.74	0.247	9.73	0.254	9.71	0.261	9.68	0.268	9.65	XI 00
20	. .	. .	.143	9.87	.146	9.86	.150	9.86	.153	9.86	.157	9.84	.161	9.82	.165	9.81	.170	9.79	.175	9.76	.181	9.73	20
40	. .	. .	.072	9.94	.073	9 93	.075	9 93	.077	9.93	.079	9.92	.081	9 90	.083	9.88	.085	9.86	.088	9.84	.091	9.81	40
XII 00	. .	. .	0.000	10.00	0.000	10.00	0.000	10.00	0.000	9.99	0.000	9.98	0.000	9.97	0.000	9.95	0.000	9.93	0.000	9.91	0.000	9.89	XII 00

	+60°.		+61°.		+62°.		+63°.		+64°.		+65°.		+66°.		+67°.		+68°.		+69°.		+70°.		
0 00	0.000	−3.62	0.000	−3.79	0.000	−3.95	0.000	−4.11	0.000	−4.27	0.000	−4.43	0.000	−4.58	0 000	−4.75	0.000	−4.89	0.000	−5.04	0 000	−5.19	0 00
20	.091	3.58	.094	3 75	.097	3 91	.100	4.07	.103	4.23	.107	4.39	.111	4.54	.116	4.71	.121	4.85	.127	5.00	.133	5.16	20
40	.181	3.52	.186	3.67	.192	3.83	.199	3.99	.208	4.15	.214	4.31	.222	4.46	.231	4.62	.241	4.77	.252	4.92	.264	5.08	40
I 00	0.268	3.40	0.278	3.56	0.287	3.72	0.297	3.88	0.308	4.03	0.319	4.19	0.331	4.34	0.345	4.50	0.359	4.65	0.376	4.80	0.394	4.94	I 00
20	.354	3.21	.367	3 40	.379	3.56	.392	3.72	.406	3.87	.421	4.02	.437	4 17	.455	4.32	.475	4.47	.497	4.62	.520	4.75	20
40	438	2.98	.453	3.16	.468	3.32	.484	3.48	.501	3.63	.520	3.78	.540	3.93	.563	4.07	.587	4.22	.613	4.37	.643	4.51	40
II 00	0.519	2.72	0.536	2.88	0.554	3 03	0.573	3.18	0.594	3.33	0.616	3.48	0.640	3.63	0.666	3.78	0.695	3.92	0.726	4.07	0.761	4.21	II 00
20	.595	2.41	.615	2.57	.635	2.72	.657	2 85	.681	3.10	.706	3.14	.734	3.28	.764	3.43	.797	3.47	.833	3.71	.872	3.85	20
40	.667	2.06	.690	2.20	.712	2.35	.737	2.49	.763	2.74	.791	2.77	.822	2.91	.856	3.05	.893	3.08	.933	3.32	.978	3.46	40
III 00	0.736	1.66	0.759	1.79	0.784	1.93	0.810	2 08	0.839	2.22	0.871	2.36	0.904	2.50	0.941	2.64	0.982	2.77	1.027	2.91	1.076	3.05	III 00
20	.796	1.23	822	1.36	.849	1.50	.878	1.65	.909	1.79	.943	1.92	.980	2.05	1 020	2.18	1.064	2.31	1 112	2.44	1.165	2.58	20
40	.851	0.76	.879	0.89	.908	1.03	.939	1.17	.972	1.31	1.009	1.43	1.048	1.56	1.091	1.69	1.132	1.81	1.189	1.94	1.246	2.08	40
IV 00	0.901	−0.25	0.929	−0.38	0.960	−0.51	0.992	0.64	1.027	0.76	1.066	0.89	1.108	1.02	1.153	1.15	1.202	1.27	1.257	1.40	1.317	1.53	IV 00
20	.943	0.27	.972	0.14	1.004	0.02	1.039	−0 09	1.074	−0.21	1.116	−0.33	1.159	−0.46	1.207	−0.58	1.258	0.70	1.316	0.82	1.379	0.95	20
40	.977	0.82	1.009	0.69	1.041	0.57	1.077	0.47	1.115	0.35	1.158	0.24	1.202	0.12	1.251	0.00	1.305	−0.12	1.364	−0.23	1.429	−0.36	40
V 00	1.005	1.38	1.037	1.27	1.070	1.16	1.107	1 04	1.149	0.93	1.189	0.81	1.236	0.70	1.287	0.58	1.342	0.47	1.402	0.36	1.469	0.25	V 00
20	1.023	1 95	1.057	1.85	1.091	1.75	1.128	1.64	1.169	1.53	1.213	1.42	1.260	1.31	1.311	1.20	1.362	1.09	1.430	0.98	1.496	0.87	20
40	1.033	2.53	1.069	2.43	1.104	2.34	1.142	1.24	1.182	2.13	1.226	2.03	1.274	1.93	1.326	1.82	1.383	1.71	1.446	1.61	1.515	1.50	40
VI 00	1.039	3.12	1.073	3.03	1.108	2.94	1.146	2.84	1.187	2.74	1.231	2.64	1.279	2.54	1.331	2.44	1.388	2.34	1.452	2.24	1.521	2.14	VI 00
20	1.033	3.71	1.069	3.62	1.104	3.53	1.142	3.44	1.182	3.34	1.226	3 25	1.274	3.15	1.326	3.05	1.383	2.95	1.446	2.87	1.515	2.78	20
40	1.023	4.29	1.057	4.21	1.091	4.12	1.128	4.04	1.169	3.95	1.213	3.86	1.260	3.76	1.311	3.68	1.362	3.57	1.430	3.50	1.496	3.41	40
VII 00	1.005	4.87	1.037	4.80	1.070	4.72	1.107	4.64	1.149	4.56	1.189	4.47	1.236	4.39	1.287	4.30	1.342	4.22	1.402	4.13	1.469	4.04	VII 00
20	0.977	5.44	1.009	5.36	1.041	5.29	1.077	5.22	1 115	5.14	1.158	5 05	1.202	4.98	1.251	4.89	1 305	4.81	1.364	4.73	1.429	4 64	20
40	.943	5.98	0.972	5.91	1.004	5.82	1.039	5.78	1.074	5.70	1.116	5.62	1.159	5.55	1.207	5.47	1.258	5.39	1.316	5.32	1.379	5.23	40
VIII 00	0.901	6.50	0.929	6.44	0.960	6.38	0 992	6.32	1.027	6 25	1.066	6.18	1.108	6.11	1.153	6.03	1.202	5.96	1.257	5.88	1.317	5.80	VIII 00
20	.851	7.00	.879	6.94	.908	6.89	.939	6.84	.972	6.77	1.009	6.71	1.048	6.65	1.091	6.57	1.132	6.50	1.189	6.42	1.246	6.34	20
40	.796	7.46	.822	7.41	.849	7.35	.878	7.30	.909	7.24	.943	7.19	.980	7.13	1.020	7.06	1.064	6.99	1.112	6.92	1.165	6.85	40
IX 00	0.736	7.91	0.759	7.86	0.784	7.81	0.810	7.76	0.839	7.70	0.871	7.64	0.904	7.58	0.941	7.52	0.982	7.44	1.027	7.39	1.076	7.34	IX 00
20	.667	8.32	.690	8.24	.712	8.20	.737	8.19	.763	8.11	.791	8.05	.822	7.99	.856	7.93	.893	7.85	0.933	7.81	0.978	7.77	20
40	.595	8.68	.615	8.60	.635	8.57	.657	8.57	.681	8.49	.706	8.42	.734	8.36	.764	8.30	.797	8.22	.833	8.18	.872	8.15	40
X 00	0.519	8.98	0.536	8.94	0.554	8.92	0.573	8.90	0.594	8.84	0.616	8.77	0.640	8.72	0.666	8.66	0.695	8 61	0.726	8.55	0.761	8.50	X 00
20	.438	9.27	.453	9.20	.468	9.18	.484	9.15	.501	9.10	.520	9.04	.540	9.00	.563	8.94	.587	8 89	.613	8.84	.643	8.79	20
40	.354	9.47	.367	9.43	.379	9.41	.392	9.38	.406	9.33	.421	9.27	.437	9.21	.455	9.17	.475	9.12	.497	9.07	.520	9.03	40
XI 00	0.268	9.65	0.278	9.62	0.287	9.59	0.297	9.56	0.308	9.52	0.319	9.48	0.331	9.43	0 345	9.38	0.359	9.33	0.376	9.28	0.394	9.23	XI 00
20	.181	9.73	.186	9.73	.192	9.70	.199	9.67	.208	9.63	.214	9.59	.222	9.54	.231	9.49	.241	9.44	.252	9.40	.264	9.35	20
40	.091	9.81	.094	9.81	.097	9.78	.100	9.75	.103	9 71	.107	9 66	.111	9.61	.116	9 57	.121	9.53	.127	9.48	.133	9.43	40
XII 00	0.000	9.89	0.000	9.86	0.000	9.83	0.000	9.79	0.000	9.75	0.000	9.71	0.000	9.67	0.000	9.63	0.000	9.58	0.000	9.53	0.000	9.48	XII 00

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Hour angle.	+70°.		+71°.		+72°.		+73°.		+74°.		+75°.		+76°.		+77°.		+78°.		+79°.		+80°.		Hour angle.
	Δ α	Δ δ	Δ α	Δ δ	Δ α	Δ δ	Δ α	Δ δ	Δ α	Δ δ	Δ α	Δ δ	Δ α	Δ δ	Δ α	Δ δ	Δ α	Δ δ	Δ α	Δ δ	Δ α	Δ δ	
h. m	s.	″	s.	″	s.	″	s.	″	s.	″	s.	″	s.	″	s.	″	s.	″	s.	″	s.	″	h. m.
0 00	0.000	−5.19	0.000	−5.34	0.000	−5.49	0.000	−5.63	0.000	−5.78	0.000	−5.92	0.000	−6 06	0.000	−6.20	0.000	−6.33	0.000	−6.47	0.000	−6.59	0 00
20	.133	5.16	.136	5.31	.147	5.47	.155	6.61	.164	5.75	.175	5.88	.187	6.02	.202	6.16	.218	6.29	.238	6.43	.261	6.55	20
40	.264	5.08	.271	5.23	.293	5.38	.309	5.52	.327	5.66	.349	5.79	.373	5.83	.402	6.07	.434	6.20	.473	6.34	.520	6.46	40
I 00	0.394	4.94	0.413	5.09	0.436	5.24	0.461	5.38	0.488	5.52	0.520	5.66	0.556	5.80	0.599	5 94	0.648	6.07	0.706	6.21	0.775	6 34	I 00
20	.520	4.75	.547	4.90	.575	5 05	.609	5.19	.646	5.33	.687	5.47	.735	5.61	.791	5.76	.856	5.88	.933	6.03	1.025	6.16	20
40	.643	4.51	.675	4.64	.711	5.81	.752	5.93	.798	5.07	.849	5.21	.909	5.35	.977	5.50	1.057	5.62	1.152	5.77	1.265	5.90	40
II 00	0.761	4.21	0.800	4.35	0 842	4.49	0.891	4.63	0.945	4.77	1.005	4.91	1.075	5.04	1.156	5.18	1.251	5.31	1.364	5.44	1.498	5.57	II 00
20	.872	3.85	.917	4.01	.966	4.15	1.023	4.29	1.083	4.42	1.153	4.56	1.233	4.69	1.327	4.83	1 435	4.96	1.564	5 09	1.718	5.22	20
40	.978	3.46	1.021	3.62	1.082	3.76	1.144	3 90	1 213	4.02	1.292	4.16	1.382	4.29	1.486	4.42	1.608	4.54	1.753	4.67	1.926	4.80	40
III 00	1.076	3.05	1.130	3.18	1.191	3.32	1 258	3.45	1.332	3.58	1 421	3.71	1.521	3.84	1.635	3.97	1.769	4.09	1.928	4 22	2.119	4 34	III 00
20	1.165	2.58	1.224	2.70	1.260	2.84	1.364	2.97	1.446	3.10	1.540	3 23	1.648	3.36	1.772	3.49	1.917	3.60	2.089	3.73	2.296	3.85	20
40	1.246	2.08	1.309	2.15	1.379	2.29	1.458	2.41	1.582	2.57	1.647	2.70	1.762	2.83	1.894	2.96	2.050	3.07	2 234	3.20	2.454	3.32	40
IV 00	1 317	1.53	1.384	1.65	1.458	1.77	1.541	1.90	1.636	2.02	1.741	2.15	1.862	2.27	2.003	2.39	2.166	2.51	2.361	2.63	2.594	2.75	IV 00
20	1.379	0.95	1.418	1.07	1.526	1.19	1.613	1.32	1.711	1.44	1.822	1.57	1 949	1.68	2.096	1.80	2.268	1.92	2 471	2.04	2.715	2.16	20
40	1.429	−0.36	1.502	−0.47	1.582	−0.59	1.672	0.72	1.774	0.84	1.889	0.97	2.020	1.07	2.172	1.19	2.351	1.31	2.563	1.42	2.815	1.54	40
V 00	1.469	0.25	1.543	0.13	1 626	0.02	1.719	−0.10	1.823	−0.21	1.941	−0 33	2.077	−0 44	2.233	−0.56	2.417	0.67	2 635	0.79	2.893	0.90	V 00
20	1.496	0.87	1.574	0 75	1.658	0.64	1.752	0.52	1.859	0.43	1.980	0.31	2.118	0.20	2.278	0.09	2.464	−0.02	2.685	−0.14	2 951	−0.24	20
40	1.515	1.50	1.592	1.38	1.677	1.29	1 772	1.16	1.880	1.08	2.002	0.96	2.142	0.86	2.303	0.75	2.493	0.64	2.716	0.52	2.984	0.43	40
VI 00	1.521	2.14	1.598	2.04	1.685	1.94	1.780	1.83	1.888	1.73	2.010	1.62	2.150	1.52	2.312	1.41	2 502	1.30	2.726	1.19	2.996	1.09	VI 00
20	1.515	2.78	1.592	2.69	1.677	2.59	1 772	2.50	1.880	2.38	2.002	2.28	2.142	2.17	2.303	2.06	2.493	1.97	2.716	1.86	2.984	1.76	20
40	1.496	3.41	1.574	3.32	1.658	3.23	1.752	3.14	1.859	3.03	1.980	3.93	2.118	2.83	2.278	2.70	2.464	2.63	2.685	2.52	2.951	2.42	40
VII 00	1.469	4.04	1.543	3.95	1.626	3.86	1.719	3.76	1.823	3.67	1.941	3.57	2.077	3.47	2.233	3.37	2.417	3.28	2.635	3.18	2.893	3.08	VII 00
20	1.429	4.64	1.502	4.55	1.582	4.47	1.672	4.37	1.774	4.29	1.889	4.19	2.020	4.10	2.172	4.00	2.351	3.91	2 563	3.81	2.815	3.72	20
40	1.379	5.23	1.448	5.14	1.526	5.06	1.613	4.98	1.711	4.89	1.822	4 79	1.949	4.71	2.096	4.62	2.268	4.52	2.471	4.42	2.715	4.33	40
VIII 00	1.317	5.80	1.384	5 72	1.458	5.64	1.541	5.56	1.636	5.47	1.741	5.38	1.862	5.30	2.003	5.21	2.166	5.12	2.361	5.02	2.594	4 93	VIII 00
20	1.246	6.34	1.309	6.27	1.379	6.19	1.458	6.12	1.582	6.02	1.647	5.94	1.762	5.85	1.894	5.76	2.050	5.68	2.234	5.58	2.454	5.49	20
40	1.165	6.85	1.224	6.77	1.260	6.70	1.364	6.63	1.446	6.55	1.540	6.47	1.648	6.38	1.772	6.29	1.917	6.21	2.089	6.11	2.296	6.02	40
IX 00	1.076	7.34	1.130	7.25	1.191	7 18	1.258	7.10	1 332	7.03	1.421	6.95	1.521	6 86	1.636	6.78	1.769	6.70	1.928	6.61	2.119	6 52	IX 00
20	0.978	7.77	1.024	7.68	1.082	7 62	1.144	7.54	1.213	7.47	1.292	7.39	1.382	7.32	1.486	7.24	1.608	7.15	1.753	7.05	1.926	6.97	20
40	.872	8.15	0.917	8.07	0.966	8.01	1.023	7.94	1.083	7.87	1.153	7.79	1.233	7.72	1.327	7.64	1.435	7.56	1.564	7.46	1.718	7.38	40
X 00	0.761	8.50	0.800	8.42	0.842	8.36	0.891	8.29	0.945	8.22	1.005	8.14	1.075	8.07	1.156	7.99	1.251	7.91	1.364	7.82	1.498	7.74	X 00
20	.643	8.79	.675	8.72	.711	8.66	.752	8.60	.798	8.53	0.849	8.45	0.909	8.38	0.977	8.30	1.057	8.22	1.152	8.12	1.266	8.05	20
40	.520	9.03	.547	8.97	.575	8.91	.609	8.85	.646	8.77	.687	8.70	.735	8.62	.791	8.54	0.856	8.47	0.933	8.38	1.025	8.31	40
XI 00	0.394	9.23	0.413	9.16	0.436	9.10	0.461	9.04	0.488	8.97	0.520	8.90	0.556	8.83	0.599	8.75	0.648	8.67	0.706	8.59	0.775	8.51	XI 00
20	.264	9.35	.271	9.30	.293	9.23	.309	9.18	.327	9.11	.349	9.05	.373	8.98	.402	8.90	.434	8.82	.473	8.64	.520	8.66	20
40	.133	9.43	.136	9.38	.147	9.31	.155	9.26	.164	9.18	.175	9.13	.187	9.06	.202	8 98	.218	8.89	.238	8.71	.261	8.73	40
XII 00	0.000	9.48	0.000	9.41	0.000	9.35	0.000	9.29	0.000	9.22	0.000	9.16	0.000	9.09	0.000	9.01	0.000	8.93	0.0.0	8.85	0.000	8.77	XII 00

	+80°.		+81°.		+82°.		+83°.		+84°.		+85°.		+86°.		+87°.		+88°.		+89°.		+90°.		
0 00	0.000	−6.59	0.000	−6.72	0.000	−6.86	0.000	−6.98	0.000	−7.11	0.000	−7.23	0.000	−7 35	0.000	−7.46	0.000	−7.58	0.000	−7.69	0.000	−7.80	0 00
20	.261	6.55	.290	6.68	.326	6.82	.372	6 94	.434	7.07	.520	7.20	.650	7.32	.876	7.43	1.299	7.55	2.595	7.66	.000	7.77	20
40	.520	6.46	.578	6.60	.649	6.74	.741	6.85	.864	7.01	1.037	7.13	1.295	7.25	1.725	7.36	2.589	7.48	5.178	7.58	.000	7.70	40
I 00	0.775	6.34	0.861	6.47	0.967	6.60	1.106	6.72	1.259	6.84	1.549	6.95	1.930	7.08	2.573	7.19	3.858	7.31	7.732	7.42	0.000	7.54	I 00
20	1.025	6.16	1.138	6.29	1.279	6.42	1.460	6.54	1.704	6.66	2.042	6.77	2.551	6 90	3.400	6.99	5.099	7.12	10.196	7.22	.000	7.31	20
40	1.266	5.90	1.406	6.02	1.579	6.16	1.804	6.28	2.103	6 40	2.522	6.51	3.151	6.64	4.201	6.73	6.300	6.87	12.595	6.96	.000	7.07	40
II 00	1.498	5.57	1.663	5.70	1.869	5 82	2.134	5 94	2.489	6.07	2.985	6.18	3.729	6.30	4.970	6.41	7.453	6.53	14.904	6.64	0.000	6.76	II 00
20	1.718	5.22	1.908	5.35	2.144	5.44	2.448	5.57	2.855	5.70	3.424	5.81	4 278	5.93	5 701	6.04	8.550	6.16	17.096	6.27	.000	6.39	20
40	1.926	4.80	2.138	4.93	2.402	5.03	2.744	5.15	3.200	5.28	3.837	5.39	4.794	5.51	6.390	5.62	9.582	5.74	19.161	5.85	.000	5 97	40
III 00	2.119	4.34	2.353	4.47	2.643	4.59	3 019	4.71	3.520	4.83	4.221	4.95	5.274	5.07	7.029	5.18	10 541	5.30	21.078	5.41	0 000	5.52	III 00
20	2.296	3.85	2.548	3 98	2.863	4.10	3.271	4.23	3.813	4.35	4.573	4.47	5.714	4.59	7.615	4.70	11.421	4.82	22.837	4.93	.000	5.03	20
40	2.454	3.32	2.724	3.44	3.062	3.57	3.497	3.69	4.077	3.80	4.890	3.92	6.110	3.04	8.143	4.15	12.111	4.27	24.419	4.38	.000	4.48	40
IV 00	2 594	2.75	2.880	2.87	3.237	2 99	3 697	3.10	4 310	3 22	5.169	3.33	6.459	3.45	8.608	3.56	12 909	3.68	25.814	3.79	0.000	3.90	IV 00
20	2.715	2.16	3.014	2.28	3.388	2.39	3.869	2.50	4.511	2.62	5.410	2.73	6.760	2.85	9.010	2.96	13.512	3.07	27.015	3 18	.000	3.29	20
40	2.815	1.54	3.124	1.66	3.512	1.77	4.012	1.89	4.678	2.00	5.609	2.11	7.008	2.23	9.342	2.34	14.010	2.44	28.009	2 55	.000	2.66	40
V 00	2.893	0.90	3 212	1.02	3.610	−1.13	4.122	1.26	4.802	1.35	5.765	1.47	7.203	1.58	9.600	1.69	14.299	1.80	28.793	1.91	0 000	2.02	V 00
20	2.951	−0.24	3.276	−0.36	3.682	0.47	4.205	−0.59	4.902	0.69	5.879	0.80	7.345	0.91	9.790	1.02	14.683	1.13	29.360	1.24	.000	1.35	20
40	2.984	0.43	3.312	0.31	3.723	0.20	4.252	0.09	4.959	−0.02	5.946	−0.12	7.428	−0.23	9.902	−0.34	14.848	−0.46	29.689	−0.56	.000	−0.68	40
VI 00	2.996	1.09	3 323	0.98	3.738	0.87	4.269	0.76	4 978	0.65	5.969	0.55	7.458	0.44	9.940	0.33	14.906	0.22	29 809	0.11	0.000	0.00	VI 00
20	2.984	1.76	3.312	1.65	3.723	1.54	4.252	1.43	4.959	1.32	5.946	1.22	7.428	1.11	9.902	1.00	14 848	0.90	29.689	0.79	.000	0.68	20
40	2.951	2.42	3.276	2.31	3.682	2.21	4.205	2.10	4.902	1.98	5.879	1.89	7.345	1.78	9.790	1.67	14.683	1.57	29.360	1.46	.000	1.35	40
VII 00	2.893	3.08	3.212	2.97	3.610	2.87	4.122	2.76	4.802	2.65	5.765	2.55	7.203	2.45	9.600	2.34	14.299	2.24	28.793	2.13	0.000	2.02	VII 00
20	2.815	3.72	3.124	3 61	3.512	3.51	4 012	3.41	4.678	3.30	5 609	3.19	7.008	3.10	9 342	3.00	14.010	2.89	28.009	2.77	.000	2.66	20
40	2.715	4.33	3.014	4.23	3.388	4.13	3.869	4.03	4.511	3.93	5.410	3.81	6.760	3.72	9.010	3.63	13.512	3.51	27.015	3.40	.000	3.29	40
VIII 00	2.594	4.93	2.880	4.83	3.237	4.73	3.697	4.63	4.310	4.53	5.169	4.43	6.459	4.33	8.608	4.23	12.909	4.12	25.814	4 01	0.000	3.90	VIII 00
20	2.454	5.49	2.724	5.39	3.062	5.29	3.497	5.19	4.077	5.09	4.890	5.00	6.110	4 90	8.143	4.80	12.111	4.69	24.419	4.58	.000	4.48	20
40	2.296	6.02	2.548	5.92	2.863	5.82	3.271	5.72	3.813	5.63	4.573	5.54	5.714	5.43	7.615	5.33	11.421	5.22	22.837	5.12	.000	5.03	40
IX 00	2.119	6.52	2.353	6.43	2.643	6.33	3.019	6.24	3.520	6.14	4.221	6.04	5.274	5 94	7.029	5.84	10.541	5.73	21.078	5.63	0.000	5.52	IX 00
20	1.926	6.97	2.138	6.89	2.402	6.77	2.744	6.68	3.200	6.59	3.837	6.48	4.794	6 38	6.390	6.28	9.582	6.17	19.161	6.07	.000	5 97	20
40	1.718	7.38	1.908	7.30	2.144	7.18	2.448	7.09	2.855	7.00	3.424	6.89	4 278	6.79	5 701	6.69	8 550	6.58	17.096	6.48	.000	6.39	40
X 00	1.498	7.74	1.663	7.65	1.869	7.56	2.134	7.47	2.489	7.37	2.985	7.28	3.729	7.18	4.970	7.07	7 453	6.96	14 904	6.86	0 000	6.76	X 00
20	1.266	8 05	1.406	7.96	1.579	7.90	1.804	7 80	2.103	7.70	2 522	7.61	3.151	7.51	4.201	7.41	6.300	7.29	12.595	7.20	.000	7.07	20
40	1.025	8.31	1.138	8.22	1.279	8.16	1.460	8.07	1.704	7.97	2.042	7.87	2.551	7.78	3.400	7.67	5.099	7.56	10.196	7.46	.000	7.34	40
XI 00	0.775	8.51	0.861	8.42	0.967	8.33	1.106	8.24	1.259	8.15	1.549	8.05	1.930	7 96	2 573	7.86	3.858	7.75	7.732	7.65	0.000	7.54	XI 00
20	.520	8.66	.578	8.58	.649	8.47	0.741	8.38	0.864	8.29	1.037	8.19	1.295	8.10	1.726	8 00	2.589	7.90	5.178	7.80	.000	7 70	20
40	.261	8.73	.290	8.65	.326	8.56	.372	8.47	.434	8.37	0.520	8.28	.650	8.18	0.876	8 08	1.299	7.98	2.595	7.88	.000	7.77	40
XII 00	0.000	8.77	0.000	8.69	0.000	8.60	0.000	8.51	0.000	8.41	0.000	8.32	0.000	8.22	0.000	8.12	0.000	8.02	0.000	7.91	0.000	7.80	XII 00

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METEOROLOGICAL OBSERVATIONS

MADE AT THE

U. S. NAVAL OBSERVATORY,

DURING THE

YEAR 1861.

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METEOROLOGICAL INSTRUMENTS.

The meteorological observations made between July, 1842, and January, 1861, will be published in separate volumes as rapidly as they can be prepared for the press.

The hours of observation during the year 1861 were very nearly the same as were adopted in July, 1840, the nominal difference being that the records in the present volume are *two minutes* earlier.

BAROMETER.

The cistern of this instrument is of glass, and 3 inches in diameter. It is fitted into a frame of bronzed brass, which turns in a bracket secured to a mahogany board. The tube has an internal diameter of 0.532 inch. The frame supporting it is of similar metal, and colored as is that of the cistern. Its upper extremity is a pivot which rests in a socket of a second bracket projecting from the top of the mahogany board, and the instrument is adjustable to a vertical position by three horizontal screws that act against a pivot of the cistern-frame which rests in the lower bracket. The scale is silvered and divided to 0.05 inch. It is attached to a brass rod inside the frame and which terminates in an ivory point within the cistern. Both rod and scale may be moved by a slow-motion screw, the scale being adjusted when the ivory point and its reflected image are just in apparent contact. The scale may be read by means of a vernier to 0.002 inch.

The temperature of the mercury in the cistern is shown by an ivory scale thermometer divided to 1° which is within the tube-frame, its bulb immersed.

The instrument was made by Newman, of London, with a tube 0.580 inch in diameter. During the latter part of 1853 it appears to have been injured, and a new tube of the dimensions already given was inserted by Mr. Wm. Würdemann. An accumulation of dust in the cistern and partial oxydation of the mercury near the top of the column made it desirable to take down the instrument at the close of March of the present year. Before doing so, a careful comparison with a new standard, put up in the southwest room by Mr. James Green, showed a correction necessary of — 0.017 inch. The new standard will be described in the volume for 1862.

On the 30th of January, 1862, a series of simultaneous comparisons was made during three hours, at intervals of 15*m.*, with the standard of the Smithsonian Institution. Each observation being corrected for temperature and reduced to the level of mean half-tide of the Potomac at Washington, the results were as follows:

COMPARISON OBSERVATIONS.

HOUR.	Observatory barometer.	Smithsonian barometer.	Obs.—Smith.
h. m.	in.	in.	
11 0 A. M. - - -	30.115	30.069	+ .046
15 - - -	.108	.060	.048
30 - - -	.101	.058	.043
45 - - -	.095	.053	.042
Noon - - -	.070	.031	.039
0 15 P. M. - - -	.064	.024	.040
30 - - -	.056	.017	.039
45 - - -	.061	30.011	.050
1 00 - - -	.034	29.996	.038
15 - - -	.026	.990	.036
30 - - -	.029	29.994	.035
45 - - -	.044	30.017	.027
2 00 - - -	30.050	30.011	+ .039

Rejecting the discordant comparisons at 1*h.* 45*m.*, the Observatory barometer stands 0.040 inch higher than the Smithsonian instrument.

The barometer is fixed between two north windows of the northwest room on the first floor of the building, its cistern 103 feet above mean half-tide water of the Potomac. All the observations have been corrected for the difference between the temperature of the mercury in the tube and 32° Fahr., by Guyot's table, giving the corrections to be applied to English barometers with brass scales extending from the cistern to the top of the mercurial column, published by the Smithsonian Institution.* The additional corrections for difference with Royal Society and Smithsonian standards, capillarity and elevation above tide-water have not been applied.

THERMOMETERS.

The thermometer used for determining temperature in the shade during the year 1861 was made by G. Tagliabue, of New York, for the use of vessels of the navy. It is a mercurial copper-cased thermometer, ten inches long, furnished with a silvered metallic scale divided to 1° from —10° to +130°. In the subjoined table it is No. 16.

* Tables, meteorological and physical, prepared for the Smithsonian Institution by Arnold Guyot, P. D., LL. D., Washington, 1859.

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The wet-bulb thermometer for the temperature of evaporation—No. 15 of the table—is of similar materials, dimensions, and construction. It was made by James Green, of New York, and its scale is of single degrees from —25° to +153°. This and the preceding instruments were placed beside each other and three feet above the ground, against the north walls of the east and west wings; their places being changed from one wing to the other as the morning and afternoon sun-beams made such change necessary between the vernal and autumnal equinoxes.

Three other thermometers, made for the naval service, were exposed to the direct action of the sun from a post three and a half feet high, placed to the southwest of the main building. They are numbered, respectively, 33, 7, and 0. No. 33, made by James Green, is divided to 1° from —13° to +150°. Its tube and scale faced to the southeast. Nos. 7 and 0 were made by G. Tagliabue, the former being divided into 2° spaces from —28° to +232°, and the latter into 1° spaces from —10° to +152°. No. 7 faced south and No. 0 to the southwest. They were prevented by wires from moving in any direction, and that instrument was read whose scale was most nearly perpendicular to the rays of the sun; but, because of the bands across the bottom of the copper cases, these rays could not reach the bulbs of either instrument unless the altitude of the Sun exceeded 45°.

The following table, resulting from a comparison with standard No. 2, Troughton and Simms, shows the corrections applicable to each of the preceding instruments at every fifth degree between 25° and 100°. The ascertained deviations of standard No. 2, from normal temperature as given in Appendix to the Washington observations for 1845, table VIII, have been applied:

CORRECTIONS TO THERMOMETERS.

Temp.	No. 16.	No. 15.	No. 33.	No. 7.	No. 0.
°	°	°	°	°	°
25	— 0.5	— 0.2	— 0.5	— 2.5	— 0.3
30	0.5	0.0	0.1	1.8	0.1
35	0.8	0.2	0.2	2.0	0.5
40	1.0	0.2	0.3	2.2	0.7
45	1.2	0.2	0.4	2.1	0.6
50	1.2	0.0	0.3	1.9	0.6
55	1.3	0.1	0.5	1.9	0.7
60	1.3	0.0	0.5	2.0	0.8
65	1.3	0.3	0.5	2.3	0.7
70	1.5	0.5	1.0	2.4	0.6
75	2.2	0.8	1.3	2.3	1.4
80	1.7	0.4	0.6	2.2	1.3
85	1.2	0.1	0.2	2.2	0.6
90	1.0	0.1	0.2	2.0	0.6
95	1.1	0.2	0.3	2.0	1.0
100	— 1.0	— 0.0	— 0.2	— 2.2	— 0.0

The corrections of the table have not been applied to the observations.

DIRECTION AND FORCE OF THE WIND.

A vane revolves freely on a spindle at the top of the time-ball staff, and the point of the compass to which it is directed by the wind is estimated from the known azimuths of the lines of the building. By daylight a close approximation to the truth is arrived at; but at night, and especially on cloudy ones, when such guide to the judgment is not visible, the recorded directions are probably no more reliable than as rough guesses.

The velocity of the atmospheric current is stated in numerals, of which 0 denotes a calm, 1 a very light breeze, and 10 a violent gale. These numbers, under the head "Force," are mere estimates, and, at best, but approximative.

CLOUDS.

The nomenclature of Howard is used, C., K., S., N., being symbols for the forms which he denominates cirrus, cumulus, stratus, nimbus, and the double letters, C. S., C. K., &c., their combinations to indicate cirro-stratus, cirro-cumulus, &c. The portion of the sky obscured is simply a naked-eye estimate from careful scrutiny of the whole hemisphere. 0 denotes a clear sky and 10 total obscuration.

RAIN-GAUGE.

This instrument is placed to the southwest of the main building, 5 feet 2 inches above the soil, and free from all shelter in driving rains. It is a cylinder 4.1 inches in diameter, soldered to an inverted cone, loaded with lead on the outside and near the apex. The cone rests in an aperture of a box, whose top is horizontal, which, with the lead, prevents its disturbance during violent winds. There is an aperture at the apex of the cone through which the rain-water passes as fast as it descends to a receiving bottle within the box referred to. The water thus collected is measured in a graduated glass cylinder with an internal diameter of 0.60 inch. It was not attended to at the end of the day as it should have been, but at irregular intervals; but, as the apex of the cone closes the mouth of the bottle except through the small aperture, the amount lost by evaporation has been very inconsiderable.

The transcripts from the journals and computations of mean results have been made by Acting Master Daniel G. Major.

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Mean time.	0h. 5m.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.	Noon.	2h. 5m	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.
1861.																
January 1	30.434	30.427	30.417	30.413	30.415	30.420	30.410	30.408	30.332	30.297	30.287	30.299	- -	30.287	30.275	30.267
2	30.254	.238	.224	.224	.188	.196	.208	.204	30.118	.091	.051	.027	30.001	29.959	29.932	29.906
3	29.850	.796	.786	.762	.739	.741	.744	- -	29.707	.702	- -	.744	.763	.792	.798	29.826
4	29.833	.882	.881	.867	.899	.925	.953	.989	29.996	30.036	.055	.083	.121	.163	.179	30.212
5	30.240	.269	.282	.290	.296	.330	.347	.347	30.302	.280	.284	.311	.328	.331	.330	30.320
6	30.300	.320	.300	.281	.284	.319	.300	.290	30.249	.188	.185	.176	.119	.116	.082	30.072
7	30.053	30.069	29.984	.966	.936	.919	.905	- -	- -	.789	.779	.791	.780	.796	.778	29.750
8	29.755	.803	.825	.840	.886	.939	.979	.997	29.991	.971	.971	.975	29.999	30.016	.034	30.033
9	30.032	.029	30.009	29.989	.969	.961	.959	.884	29.781	- -	.692	.662	.668	.675	.678	29.657
10	29.640	.634	.616	.617	.595	.590	.632	.623	29.584	- -	.590	.628	.757	.829	.859	29.883
11	29.931	.953	29.975	30.009	.081	.091	.094	.064	- -	.997	29.987	30.007	.947	.879	.835	29.800
12	29.776	.756	.759	.763	.773	.806	.821	.847	29.859	.917	29.970	30.007	.118	.194	.236	30.235
13	30.319	.353	.396	.457	.488	.541	.554	.572	30.541	.530	.523	.512	.556	.560	.565	30.541
14	30.515	.497	.470	.447	.419	.407	.390	.362	30.260	- -	- -	.131	.072	.051	30.009	29.999
15	29.963	.969	.951	.943	.929	.928	.931	.947	29.899	- -	- -	.846	.841	.832	.816	29.806
16	29.785	.776	.730	.686	.618	.549	.543	.536	29.489	- -	.528	.544	.579	.631	.660	29.673
17	29.720	.749	.783	.839	.881	.951	29.983	30.011	30.014	.023	.044	.075	.134	.152	.164	30.174
18	30.178	.182	.186	.184	.149	.161	- -	.147	30.035	29.982	.915	.894	.861	.786	.771	29.741
19	29.716	.723	.744	.759	.774	.797	- -	.827	29.800	.778	.766	.795	.812	.824	.842	29.854
20	29.862	.882	.892	.895	.926	.939	.961	- -	29.991	.974	29.999	30.010	.041	.078	.084	30.090
21	30.094	.108	.120	.134	.142	.146	.160	- -	30.176	- -	.186	.200	.257	.299	.331	30.337
22	30.371	.389	.409	.411	.461	.484	.516	- -	30.518	.504	.508	.522	.547	.568	.584	30.584
23	30.594	.600	.606	.612	.625	.639	.653	.661	30.601	- -	.565	.550	.553	.531	- -	30.503
24	30.379	.343	.290	.259	.203	.133	30.063	29.989	29.899	.891	.789	.814	.838	.885	.890	29.915
25	29.945	.961	.975	29.994	30.009	.054	.086	.094	30.073	- -	.074	.072	.102	.140	.141	30.141
26	30.154	.142	.136	.146	.136	.139	.154	.142	30.085	.077	.053	.041	.045	.055	.069	30.068
27	30.068	.068	.075	.079	.084	.106	.110	.124	30.079	.039	.018	.004	30.000	29.996	.982	29.970
28	29.943	.942	.943	29.943	30.003	.036	.074	.086	30.102	.078	.079	.074	.081	.073	.069	30.049
29	30.051	30.074	29.986	.966	.936	.919	.903	.891	29.847	.796	.785	.761	.752	.737	.733	29.705
30	29.669	.656	.656	.670	.709	.789	.866	29.951	30.024	.058	.079	.089	.136	.163	.173	30.179
31	30.174	30.173	30.174	30.177	30.170	30.195	30.198	30.185	30.142	- -	30.093	30.078	30.071	30.051	30.061	30.054
Hourly means	30.019	30.057	30.051	30.052	30.055	30.069	30.086	30.084	30.086	30.045	30.031	30.023	30.029	30.037	30.031	30.043

Mean time.	0h. 5m.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.	Noon.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.
1861.																
February 1	30.033	30.041	30.051	30.055	30.062	30.068	30.089	30.079	30.044	29.983	29.938	29.926	29.917	29.899	29.877	29.858
2	29.803	.737	.703	.675	.640	.638	.610	.618	29.626	- -	.618	.602	- -	.752	.788	29.803
3	29.878	.908	.958	29.990	30.073	.126	.177	.205	30.210	.226	.232	.242	.264	.300	.308	30.294
4	30.295	.300	.280	.270	.258	.251	.278	.264	30.263	.215	.217	.220	.232	.247	.254	30.262
5	30.264	.259	.259	.249	.237	.238	.243	.239	30.181	.129	.096	.070	.056	.051	.041	30.027
6	29.980	.971	.959	.953	.946	.980	.978	- -	29.913	- -	- -	.791	.782	.774	.755	29.743
7	29.713	.664	.647	.603	.513	.471	.419	.405	29.305	.421	.502	.593	.849	29.957	30.032	30.102
8	30.204	.284	.300	.329	.381	.495	.513	.527	30.528	.508	.492	.506	.524	.537	.537	30.527
9	30.527	.523	.520	.530	.535	.559	.565	.565	30.530	.491	.477	.427	.471	.484	.478	30.474
10	30.464	.458	.457	.450	.444	.448	.458	.442	30.402	.350	.323	.308	.301	.300	.293	30.287
11	30.278	.255	.232	.218	.198	.188	.169	.160	30.086	30.000	29.978	.976	.936	.913	.900	29.873
12	29.819	.791	.741	.721	.702	.723	.706	.709	29.673	.653	.679	.696	.771	.826	.852	29.886
13	29.923	.939	.961	.973	29.997	30.066	- -	.105	30.100	.076	.089	.097	.127	.126	.139	30.129
14	30.100	.091	.085	.081	.079	.092	.079	.066	30.009	29.949	.905	.861	.823	.753	.735	29.716
15	29.612	.575	.538	.524	.484	.468	.431	.419	29.420	.442	.433	.457	.561	.604	.618	29.628
16	29.690	.707	.743	.771	.796	.791	.791	- -	29.730	.640	.550	.463	.327	.341	.331	29.338
17	29.373	.438	.488	.538	.578	.601	.641	.647	29.650	.666	.676	.677	.713	.765	.783	29.801
18	29.811	.825	.831	.837	.849	.886	.892	.892	29.900	.887	.891	.917	29.965	30.002	.021	30.041
19	30.057	.067	.071	.076	.078	.073	.081	30.065	29.996	.942	.926	.910	.864	.853	.826	29.804
20	29.739	.681	.665	.637	.597	.633	.632	.627	29.606	.604	.607	.613	.630	.671	.703	29.702
21	29.713	.731	.747	.767	.804	.843	.873	.893	29.889	- -	.888	.896	29.956	30.018	.038	30.061
22	30.105	.147	.166	.180	.213	.244	.254	.255	30.197	.130	- -	.074	.030	30.007	29.983	29.943
23	29.925	.887	.875	.865	.881	.866	.852	.829	- -	.703	.689	.671	.680	.701	.671	29.643
24	29.538	.562	.587	.600	.619	.693	.740	.770	29.868	.946	29.976	30.042	.149	.258	.308	30.318
25	30.367	.393	.414	.428	.458	.497	.506	.490	30.441	.359	.361	.326	.310	.314	.284	30.287
26	30.238	.222	.202	.182	.175	.179	.184	- -	30.172	- -	.149	.168	.177	.192	.200	30.210
27	30.212	.210	.215	.214	.256	.272	.290	.290	30.263	.223	- -	.206	.225	.238	.255	30.252
28	30.232	30.224	30.210	30.222	30.240	30.249	30.268	30.249	30.218	- -	30.112	30.105	30.085	30.051	30.055	30.039
Hourly means.	29.996	29.996	29.997	29.998	30.003	30.023	30.026	30.032	30.008	29.980	29.952	29.994	20.990	29.998	30.002	30.002

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Mean time.		0h. 5m.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.	Noon.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.
1861. March	1	30.001	29.953	29.931	29.931	29.911	29.925	29.917	29.902	29.891	29.859	29.837	29.843	29.871	29.881	29.881	29.883
	2	29.889	.879	.861	.857	.869	.883	.892	- -	29.833	.781	.761	.745	.752	.745	- -	29.727
	3	29.717	.717	.707	.700	.713	.683	.679	.669	29.605	.534	.502	.482	.474	.449	.433	29.433
	4	29.433	.473	.503	.569	.615	.693	.727	.754	- -	- -	- -	- -	.803	.823	.835	29.840
	5	29.845	.850	.851	.866	.892	.921	.955	.972	29.963	.943	.926	29.978	30.073	.140	.177	30.187
	6	30.193	.177	.170	.160	.136	.108	.088	30.051	29.998	.947	- -	.909	.898	.892	.902	29.912
	7	29.935	30.000	.045	.100	.191	.260	.328	.349	30.360	.350	.345	.367	.387	.437	.442	30.437
	8	30.428	.432	.434	.440	.447	.458	.442	- -	30.358	- -	.259	.238	.189	.135	.100	30.032
	9	29.943	.883	.806	.737	.640	.578	.483	.493	29.529	.548	.568	.587	.684	.746	.763	29.799
	10	29.813	.827	.849	.861	.892	.945	.981	.979	30.009	.004	.009	.019	.091	.138	.145	30.157
	11	30.175	.211	.229	.241	.259	.305	.334	.353	- -	.319	.300	.290	.265	.268	.251	30.241
	12	30.206	.180	.160	.136	.114	.125	.121	.102	- -	30.022	29.993	.956	.939	.935	.941	29.945
	13	29.931	.931	.932	.932	.933	.947	.961	.955	29.915	.875	- -	.883	.933	29.993	30.013	30.032
	14	30.041	.049	.053	.048	.046	.091	.093	.091	30.057	- -	.031	.010	.019	.031	.027	30.019
	15	29.996	.986	.981	.971	.963	.967	.957	.927	29.893	.796	.769	.732	.734	.706	.693	29.677
	16	29.636	.632	.642	.652	.681	.700	.708	.700	29.665	.622	.590	.590	.617	.640	.648	29.654
	17	29.707	.737	.711	.737	.787	.820	.866	.888	29.919	.952	.976	29.982	30.021	.082	.112	- -
	18	30.184	.205	.244	.270	.290	.316	.315	.320	30.302	- -	.270	.280	.285	.279	.255	30.247
	19	30.227	.188	.172	.160	.171	.185	.193	.197	30.134	.140	.132	.124	.138	.182	.197	30.205
	20	30.204	.213	.221	.226	.227	.227	.230	.228	30.170	.098	.068	.052	.011	30.000	29.978	29.960
	21	29.929	.889	.861	.849	.883	.888	.892	.887	29.870	.829	.843	.839	.867	.874	.881	29.890
	22	29.889	.900	.902	.912	.928	.983	.991	- -	30.001	29.976	.976	.949	29.964	30.009	.015	30.023
	23	30.037	.033	.029	.026	.016	.030	30.011	29.991	29.933	.856	.829	.781	.757	.746	.745	29.731
	24	29.732	.783	.793	.815	.839	.901	.901	.917	29.910	.909	.929	29.958	30.071	.159	.189	30.222
	25	30.261	.257	.252	.260	.271	.342	.317	.326	30.286	.201	.177	.140	.127	.137	.104	30.085
	26	30.048	.034	.028	.022	.034	.044	.017	30.007	29.953	.891	.883	.844	.826	.817	.800	29.778
	27	29.752	.748	.726	.709	.683	.713	.694	.666	29.631	.646	.666	.697	.782	.882	.929	29.960
	28	30.007	.059	.075	.117	.167	.210	.240	.232	30.238	.196	.202	.212	.210	.230	.230	30.220
	29	30.230	.230	.230	.223	.226	.213	.204	.196	30.148	30.064	- -	29.997	.973	.938	.921	29.893
	30	29.831	.781	.761	.747	.731	.721	.733	.769	29.795	.846	.886	29.963	30.071	.139	.151	30.175
	31	30.197	30.212	30.214	30.218	30.290	30.360	30.371	30.370	30.357	30.349	30.308	30.312	30.321	30.341	30.351	30.373
Hourly means.		29.981	29.982	29.980	29.984	29.995	30.017	30.021	30.010	29.990	29.946	29.964	29.959	29.973	29.993	30.003	29.991

Mean time.		0h. 5m.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.	Noon.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.
1861. April	1	30.332	30.328	30.321	30.311	30.323	30.311	30.311	30.304	30.181	30.146	30.118	30.088	30.035	30.019	30.017	30.007
	2	30.009	.009	.011	.013	.050	- -	.080	.093	30.091	- -	.078	.071	.108	.153	.150	30.148
	3	30.145	.159	.167	.178	.204	.219	.212	- -	30.189	- -	- -	.149	.176	.207	- -	30.250
	4	30.280	.290	.290	.294	.320	.373	.384	- -	30.342	.303	.279	.259	.254	.262	.260	30.260
	5	30.240	.206	.210	.216	.220	.215	.220	- -	30.188	- -	- -	.128	.125	.151	.166	30.156
	6	30.135	.135	.145	.165	.185	.226	- -	.253	30.247	- -	- -	.190	.200	.216	.232	30.238
	7	30.258	.248	.240	.226	.228	.254	.255	.258	30.248	.220	.187	.177	.154	.168	.170	30.176
	8	30.150	.140	.117	.103	.120	.126	.128	- -	30.092	30.032	29.998	30.010	29.971	.948	.939	29.929
	9	29.889	.849	.789	.743	.741	.685	.681	- -	29.687	.681	.674	.690	.730	.770	.778	29.770
	10	29.757	.771	.786	.800	.811	.838	.865	.883	29.883	.851	- -	.891	.929	.979	.979	29.968
	11	29.966	29.986	30.008	.025	.050	.055	.058	.063	- -	- -	- -	29.987	30.013	.043	.049	30.051
	12	30.063	.061	.061	.061	.080	.086	.091	.074	- -	- -	29.949	.947	.901	.875	.868	29.836
	13	29.797	.783	.743	.635	.616	.647	.637	.643	- -	- -	.566	.568	.585	.666	.668	29.678
	14	29.716	.736	- -	.742	.788	.815	.829	.831	29.829	.837	.832	.822	.853	.897	.929	29.925
	15	29.917	.926	.940	.946	.963	.957	.954	.943	29.924	- -	- -	.910	.850	.845	.838	29.825
	16	29.806	.728	.693	.680	.631	.524	.519	.480	29.384	.335	.325	.326	.307	.313	.503	29.280
	17	29.265	.259	.257	.276	.311	.361	.383	.413	29.455	- -	- -	.548	.616	.708	.736	29.749
	18	29.768	.782	.783	.775	.786	.749	.729	- -	29.604	.544	- -	.504	.484	- -	.487	29.487
	19	29.566	.584	.594	.613	.631	.657	.663	.667	29.693	- -	.715	.729	.771	.819	.850	29.873
	20	29.923	.933	.941	.966	29.998	30.041	.052	- -	30.047	.010	- -	29.997	- -	30.030	.048	30.036
	21	30.046	.046	.054	.050	.086	.088	.081	.075	30.039	29.999	.993	.986	29.976	30.001	29.999	30.000
	22	29.981	.933	.933	.943	.953	.944	.943	.928	29.883	- -	.867	.795	.800	.810	.840	29.838
	23	29.859	.868	.880	.886	.905	.917	.919	.920	29.870	- -	.799	.796	.800	.802	.807	29.801
	24	29.785	.786	.770	.766	.786	.788	.782	- -	29.708	- -	.639	.668	.705	.771	.797	29.825
	25	29.876	.878	.884	.890	.929	.941	.944	.934	29.925	.899	- -	.879	.869	.891	.904	29.909
	26	29.927	.909	.930	.941	29.981	30.006	.027	.029	30.014	29.971	.949	.934	.909	.921	.920	29.921
	27	29.900	.891	.877	.859	.873	.862	.848	.841	- -	- -	.676	.646	.626	.628	.622	29.624
	28	29.587	.550	.526	.486	.475	.439	.431	.485	29.501	.599	.623	.662	.695	.736	.763	29.773
	29	29.811	.861	.873	.883	.926	.915	.909	.917	29.884	- -	.823	.813	.798	.804	.807	29.795
	30	29.777	29.747	29.743	29.718	29.698	29.667	29.647	- -	29.724	- -	- -	29.787	29.797	29.822	29.834	29.847
Hourly means.		29.918	29.913	29.916	29.906	29.922	29.921	29.916	29.906	29.909	29.888	29.847	29.832	29.835	29.905	29.888	29.899

Hosted by Google

Mean time.	0h. 5m.	2h. 5m.	3h. 5m	4h. 5m	6h. 5m.	8h. 5m	9h. 5m.	10h. 5m.	Noon.	2h. 5m	3h. 5m	4h. 5m.	6h. 5m	8h. 5m	9h. 5m.	10h 5m.
1861.																
May 1	29.825	29.805	29.797	29.787	29.777	29.779	29.775	29.787	- -	- -	- -	29.900	- -	- -	- -	30.039
2	30.049	.067	.088	.098	.142	.175	.175	.179	30.120	- -	- -	.073	- -	.068	.087	30.085
3	30.079	.073	.069	.063	.085	30.025	29.981	.979	- -	- -	.890	.878	.865	.820	.817	29.812
4	29.772	.728	.713	.697	.700	.734	.766	.805	29.865	.869	.874	.878	.891	.899	.910	29.910
5	29.923	.937	.946	.962	.954	.969	.969	.969	29.944	.918	.902	.894	.895	.887	.891	29.889
6	29.848	.807	.767	.748	.749	.702	.683	.653	- -	- -	- -	.340	.204	.304	.304	29.326
7	29.360	.384	.404	.434	.476	.499	.498	- -	29.354	.434	- -	.424	.454	.491	.529	29.554
8	29.548	.544	.540	.534	.548	.539	- -	- -	29.561	.604	- -	.656	.676	.741	.775	29.792
9	29.822	.839	.853	.865	.889	.905	.905	- -	- -	- -	- -	.834	.836	.893	.914	29.916
10	29.905	.887	.913	.932	.893	.895	.855	- -	- -	- -	- -	.617	.635	.657	.667	29.685
11	29.691	.705	.725	.755	.778	.757	.747	- -	29.747	- -	- -	.699	.744	.759	.787	29.803
12	29.794	.800	.806	.818	.836	.836	.863	.867	29.841	.810	.809	.839	.809	.846	.840	29.821
13	29.833	.829	.825	.823	.818	.817	.814	.814	29.772	- -	.704	.684	.651	.664	.705	29.669
14	29.696	.704	.696	.686	.702	.722	- -	- -	29.712	- -	- -	.674	.694	.771	.812	29.833
15	29.878	.896	.908	.916	.948	.968	.954	- -	29.911	- -	.852	.826	.802	.781	.794	29.786
16	29.774	.789	.789	.789	.812	.834	.842	.841	- -	- -	- -	.789	.810	.851	.891	29.891
17	29.921	.941	.971	29.991	30.011	.004	- -	- -	29.989	- -	- -	.973	29.989	30.042	.065	30.074
18	30.097	.107	.113	.117	.148	.148	.141	- -	- -	- -	.059	.047	.030	.073	.099	30.129
19	30.149	.152	.158	.164	.172	.148	- -	.132	30.098	.052	.008	30.003	29.961	.945	.925	29.915
20	29.871	.802	.772	.750	.720	.705	.675	.669	29.667	- -	- -	.665	.671	.707	.725	29.741
21	29.751	.759	.765	.777	.815	.848	- -	.859	29.877	.885	.899	.905	.905	.936	.957	29.967
22	29.977	.977	29.987	30.005	.041	.080	.097	.101	30.092	.066	- -	.061	.073	.086	.125	30.135
23	30.122	.135	.151	.173	.187	.224	.209	.214	30.191	- -	- -	.166	.169	.169	.195	30.221
24	30.218	.206	.214	.230	.240	.242	- -	- -	30.156	.071	.047	.037	- -	29.997	30.017	30.015
25	29.982	.919	.897	.877	.848	.802	.829	- -	29.745	- -	- -	.672	.661	.660	.681	29.690
26	29.682	.690	.690	.690	.692	.707	.692	.677	29.658	.600	.580	.540	.500	.517	.448	29.454
27	29.388	.318	.288	.258	.260	.246	.212	- -	29.259	- -	.429	.481	.545	.623	.651	29.687
28	29.709	.735	.755	.776	.824	.853	.864	- -	29.894	.871	- -	.861	.866	.899	.912	29.904
29	29.902	.857	.859	.853	.914	.947	.949	- -	29.976	.994	.993	.993	- -	30.066	.123	30.145
30	30.157	.166	.180	.196	.230	.272	.274	.273	30.259	- -	- -	.187	.187	.199	.209	30.230
31	30.230	30.241	30.256	30.266	30.304	30.314	- -	30.307	30.292	30.248	30.229	30.202	30.198	30.210	30.221	30.208
Hourly means.	29.869	29.864	29.868	29.872	29.888	29.893	29.865	29.949	29.874	29.879	29.877	29.832	29.805	29.852	29.869	29.881

Mean time.	0h 5m.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.	Noon.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.
1861.																
June 1	30.193	30.193	30.195	30.197	30.204	30.207	30.189	30.206	30.163	30.108	30.090	30.070	30.069	30.081	30.106	30.105
2	30.079	.073	.061	.049	.051	.079	.066	.061	30.047	30.003	29.983	.978	.967	.978	.978	29.971
3	29.934	.893	.883	.883	.883	.881	.869	- -	- -	- -	.766	.755	- -	.887	.887	29.791
4	29.773	.769	.768	.766	.768	.781	.781	- -	29.797	- -	.783	.795	.823	.851	.869	29.883
5	29.881	.881	.889	.901	.922	.934	.961	.983	- -	.994	.990	29.999	30.019	.041	.058	30.054
6	30.057	.052	.044	.034	.044	.054	.046	.057	30.037	- -	- -	29.994	.989	29.997	30.016	30.004
7	29.994	.964	.962	.958	.958	.968	.983	- -	29.964	.932	.914	.897	.904	.904	.918	29.918
8	29.934	.914	.910	.904	.934	.954	.954	- -	29.941	.935	.921	.910	.899	.931	.954	29.962
9	29.964	.956	.954	.944	29.994	30.024	.032	.041	30.011	29.979	.969	.954	.938	.950	.959	29.959
10	30.059	29.949	.944	.934	.934	.938	.931	.926	29.917	- -	- -	.823	.804	.810	.802	29.801
11	29.790	.801	.813	.831	.843	.831	- -	.828	29.800	- -	.755	.753	.733	.744	.769	29.769
12	29.825	.818	.800	.781	.783	.798	.785	.779	29.761	.726	- -	709	- -	.778	.815	29.807
13	29.835	- -	.859	.910	.938	.963	.982	.987	29.984	.988	.980	.934	.947	.973	.978	30.005
14	30.011	- -	.040	.066	.091	.091	.089	- -	30.048	.004	.004	30.000	29.956	.939	.957	29.947
15	29.910	.881	.881	.881	.879	.859	.849	- -	29.793	.743	.726	.689	.689	.676	.674	29.703
16	29.677	.659	.644	.628	.630	.634	.618	.608	29.580	.608	.626	.638	.662	.733	.747	29.771
17	29.775	.785	.787	.798	.813	.841	.864	.877	29.869	- -	- -	.877	.882	.886	.896	29.902
18	29.929	.923	.917	.911	.921	.939	.934	.925	29.901	.878	.874	.861	.858	.873	.893	29.896
19	29.909	.909	.909	.909	.941	.961	- -	.958	29.928	- -	.883	.873	.849	.851	- -	29.836
20	29.816	.815	.813	.821	.836	.835	.832	- -	29.822	.807	- -	.810	.807	.818	.833	29.840
21	29.864	.856	.842	.843	.835	.838	.825	.809	29.746	.676	- -	.625	.621	.632	- -	29.648
22	29.650	.662	.682	.712	.700	.746	.765	.761	29.747	.747	.737	.737	.733	.739	.765	29.780
23	29.785	.778	.775	.773	.781	.785	.781	.784	29.762	.692	.673	.660	.642	.667	- -	29.718
24	29.732	.750	.767	.823	.858	.909	.908	.907	29.890	.885	.874	.880	.873	.906	.943	29.958
25	29.969	.969	.982	29.990	30.018	.032	.041	- -	30.030	- -	- -	29.978	.956	.957	.959	29.962
26	29.973	.963	.945	.937	.911	.905	.893	- -	29.865	.829	.808	.787	.812	.843	.867	29.886
27	29.910	.923	.924	.925	29.975	30.035	.036	- -	30.025	- -	- -	29.975	.961	.973	.979	29.981
28	29.973	.959	.946	.955	.963	.958	.955	.953	29.925	- -	.859	.857	.808	.835	.865	29.877
29	29.867	.842	.845	.843	.874	.878	.897	.914	29.902	.879	.877	.867	.857	.873	.873	29.875
30	29.883	29.876	29.876	29.870	29.879	29.885	29.875	29.867	29.861	29.833	29.842	29.795	29.786	29.779	29.801	29.809
Hourly means.	29.898	29.886	29.889	29.893	29.905	29.918	29.919	29.912	29.897	29.862	29.860	29.849	29.852	29.864	29.895	29.881

Hosted by Google

Mean time.	0h. 5m.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.	Noon.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.
1861. July 1	29.776	29.762	29.756	29.752	29.785	29.785	29.788	29.786	29.763	29.721	- -	29.673	29.661	29.728	29.723	29.731
2	29.751	.783	.805	.833	.859	.902	.902	.900	29.923	.925	- -	.925	- -	30.019	- -	30.056
3	30.051	.047	.039	.039	.053	.087	.103	.111	30.082	- -	.051	.055	.052	.055	.071	30.074
4	30.082	.100	.106	.106	.103	.128	.121	.132	30.114	.088	.072	.068	- -	- -	.072	30.089
5	30.080	.050	.044	.055	.070	.085	.086	- -	30.072	.033	.010	.004	29.988	.973	.998	29.999
6	30.005	29.998	.994	29.988	30.018	.028	- -	.025	30.013	- -	29.975	.975	.975	.974	.985	29.991
7	29.978	.968	.950	.938	.988	.997	30.006	.013	29.998	.972	.967	.949	.942	.943	.943	29.965
8	29.967	.944	.931	.933	.959	.954	- -	- -	29.920	.871	.846	.849	.841	.807	.799	29.795
9	29.793	.797	.767	.752	.756	.767	.745	- -	29.687	- -	.612	.591	.657	.650	.656	29.656
10	29.658	.655	.650	.649	.674	.698	.691	- -	29.670	- -	.628	.594	.668	.680	.687	29.691
11	29.657	.642	.644	.634	.671	.686	.688	- -	29.684	- -	.654	.662	.694	.730	.752	29.756
12	29.776	.799	.834	.854	.874	.887	.897	- -	29.892	.879	.868	.862	.871	.891	.898	29.907
13	29.912	.913	.913	.913	.951	.945	.951	- -	29.987	.947	.943	.953	.963	29.984	30.006	30.014
14	30.021	29.997	.997	29.998	30.018	.017	.011	.011	30.000	.000	.000	.001	- -	.009	.023	30.012
15	30.007	29.994	.990	.991	29.991	30.000	.011	- -	29.955	- -	.931	.913	.938	.928	.946	29.936
16	29.936	.937	.935	.941	.931	.923	.914	.893	29.880	- -	.852	.845	.831	.849	.859	29.859
17	29.874	.866	.867	.871	.902	.943	.943	.951	29.945	- -	- -	.913	.907	.925	.928	29.858
18	29.948	.947	.943	.959	.973	.991	.987	.987	29.970	- -	.905	.886	- -	.887	.902	29.913
19	29.873	.851	.838	.825	.838	.828	.817	- -	29.809	- -	- -	.709	.706	.707	.705	29.706
20	29.674	.614	.610	.604	.598	.610	.604	.618	- -	.606	.606	.614	.672	.727	.768	29.780
21	29.811	.803	.808	.878	.875	.893	.903	- -	29.914	.897	.889	.872	.854	.885	.900	29.906
22	29.891	.883	.886	.876	.874	.896	.878	.905	- -	- -	.853	.864	.849	.842	.836	29.812
23	29.828	.818	.826	.836	.849	.879	.882	.889	29.883	.891	.881	.890	.893	.923	.943	29.931
24	29.949	.960	.969	29.977	30.007	.023	.025	.029	30.010	- -	- -	29.973	- -	29.993	30.017	30.022
25	30.019	.009	.015	.023	.051	.070	.073	.073	30.059	- -	.035	.033	.038	.033	.033	- -
26	30.055	.049	.055	.060	.058	.061	.059	- -	30.036	- -	29.992	.990	.975	.972	.978	29.981
27	- -	.945	.937	.941	.958	.965	.968	.967	29.955	- -	.933	.915	.905	.918	.921	29.921
28	29.922	.903	.908	.914	.906	.926	.921	.911	29.875	- -	.820	.820	.813	.845	.855	29.835
29	29.814	.804	.800	.802	.834	.875	.854	- -	29.878	29.854	- -	.855	.831	.847	.864	29.882
30	29.910	.923	.937	.948	- -	.983	.991	29.991	30.006	- -	.956	- -	.953	.941	.947	29.952
31	29.955	29.955	29.952	29.951	29.958	29.965	29.958	29.970	29.936	- -	- -	29.865	29.847	29.829	29.829	29.832
Hourly means.	29.899	29.894	29.894	29.898	29.913	29.929	29.923	29.956	29.928	29.899	29.887	29.871	29.859	29.883	29.895	29.896

Mean time.	0h. 5m.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.	Noon.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.
1861. August 1	29.842	29.822	29.809	29.795	29.807	29.815	29.812	29.805	29.789	29.762	29.745	29.742	29.759	29.791	29.792	29.802
2	29.789	.794	.797	.801	- -	.837	.847	.855	- -	.857	.835	.822	.815	.829	.829	29.830
3	29.845	.855	.866	.873	.892	.901	.907	.918	29.907	- -	- -	.885	.877	.919	.919	29.918
4	29.932	.932	.928	.931	.955	.965	.962	.967	29.955	.909	.889	.873	- -	.851	.868	29.868
5	29.851	.844	.830	.813	.805	.800	.803	- -	29.835	- -	.743	.737	.751	.770	.800	29.780
6	29.786	.784	.781	.777	.802	.835	.842	.857	29.842	.815	.809	- -	.800	.834	.847	29.852
7	29.883	.886	.880	.870	.890	.911	.909	- -	29.900	- -	- -	- -	.843	.861	.868	29.877
8	29.837	.841	.842	.842	.862	.879	.886	- -	29.869	.849	.843	.832	.827	.833	.852	29.854
9	29.857	.855	.856	.852	.855	.865	.865	.866	29.840	.807	.780	.770	.759	.781	.785	29.765
10	29.738	.708	.698	.728	.748	.748	.755	- -	29.741	.715	.702	.684	.684	.686	.712	29.717
11	29.702	.707	.716	.718	.725	.733	.740	.756	29.738	.723	.701	.725	.731	.772	.809	29.829
12	29.800	.762	.754	.774	.789	.803	.800	.800	- -	.761	.743	.720	.710	.696	.696	29.683
13	29.654	.637	.625	.607	.617	.625	- -	- -	29.606	- -	- -	- -	.770	.854	.889	29.919
14	29.939	.939	.947	29.952	30.005	.058	.075	- -	- -	- -	.109	.113	.114	.117	.143	30.155
15	30.180	.175	.168	.164	.190	.201	.193	.210	30.206	- -	- -	.149	- -	.150	.157	30.163
16	30.147	.123	.123	.126	.141	.150	.149	- -	30.127	.107	.102	.101	.090	.091	.091	30.063
17	30.063	.081	.073	.081	.091	.111	.111	- -	30.131	.108	.086	.086	.113	.125	.133	30.135
18	30.129	.075	.087	.089	.119	.113	.129	.132	30.116	.096	.075	.067	.059	.047	.043	30.043
19	30.054	.050	.044	.040	.034	.028	.023	.025	30.013	29.991	.978	.979	.971	.989	.993	29.973
20	29.973	.974	.973	29.983	30.048	.073	.102	.128	30.142	.135	.141	.157	.178	.200	.211	30.224
21	30.231	.252	.268	.288	.280	.286	.284	- -	- -	.222	.211	.196	- -	.137	.128	30.115
22	30.040	.034	.018	30.002	29.986	.963	.943	- -	29.866	- -	- -	.794	.767	.791	.818	29.844
23	29.900	.912	.916	.936	29.979	30.001	.001	- -	30.018	.003	- -	.000	- -	.020	.037	30.049
24	30.030	.035	.041	.051	.074	.071	.085	.089	30.086	- -	.051	.053	.043	.043	.066	30.067
25	30.079	.069	.083	.092	.112	.132	.128	.139	30.126	.097	.097	.097	.095	.133	.156	30.162
26	30.136	.136	.139	.139	.191	.207	.201	.206	30.183	.170	.161	.147	.121	.115	.116	30.119
27	30.151	.146	.144	.145	.153	.141	.138	.132	30.124	- -	- -	.096	.092	.084	.086	- -
28	30.056	.048	.036	.032	.059	.060	.079	- -	30.081	.054	.049	.045	.046	.025	.025	30.025
29	30.023	30.005	29.996	.976	.971	.945	.945	.943	29.922	- -	- -	.847	.873	.893	.885	29.885
30	29.878	.856	.858	.866	.897	.923	.923	- -	29.921	- -	- -	.882	.895	.938	.939	29.953
31	29.989	30.005	30.017	30.029	30.060	30.103	30.103	- -	30.086	30.073	30.057	30.057	30.080	30.101	30.121	30.123
Hourly means.	29.952	29.947	29.946	29.947	29.971	29.977	29.991	29.999	29.969	29.963	29.950	29.952	29.921	29.951	29.962	29.960

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Mean time.	0h. 5m.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.	Noon.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.
1861.																
September 1	30.138	30.119	30.135	30.140	30.173	30.195	30.195	30.190	30.165	30.146	30.127	30.127	30.101	30.101	30.102	30.118
2	30.147	.153	.155	.149	.163	.159	.157	- -	30.153	.133	.117	.102	.093	.093	.100	30.100
3	30.089	.079	.071	.065	.086	.083	.076	.082	- -	- -	- -	29.975	.964	.962	.973	29.997
4	30.019	.018	.021	.019	.033	.033	.042	- -	30.033	- -	- -	.015	.018	.035	.034	30.031
5	30.023	30.002	29.989	30.000	.007	.015	.013	- -	- -	- -	- -	29.929	.929	.933	.933	29.932
6	29.897	.871	.865	.859	.879	.875	.874	- -	29.863	- -	- -	.816	.821	.837	.853	29.866
7	29.870	.868	.868	.868	.889	.919	.941	- -	29.951	- -	.946	- -	- -	30.004	.001	30.003
8	30.065	.073	.084	.108	.126	.145	.165	.176	30.173	.173	.163	.168	.171	.186	.194	30.198
9	30.168	.162	.156	.161	.189	.213	- -	.243	30.205	- -	.160	.156	.168	.172	.173	30.175
10	30.181	.191	.201	.207	.222	.229	.217	- -	30.198	- -	.138	.118	- -	.091	.083	30.073
11	30.053	30.019	29.983	.953	.933	.933	.919	.890	29.865	.824	.793	.718	.708	.701	.708	29.708
12	29.711	.721	.726	.734	.762	.797	.820	.834	- -	- -	.835	.835	- -	.901	.931	29.938
13	29.938	.936	.936	.948	29.989	30.021	.060	- -	30.060	- -	.035	- -	.042	.047	.088	30.094
14	30.093	.105	.115	.129	.148	.159	.156	- -	- -	- -	.088	.078	.078	.088	.098	30.091
15	30.043	.047	.042	.046	.039	.033	.032	.048	30.003	.963	.953	.957	.952	.947	.948	29.949
16	29.949	29.978	30.001	.031	.035	.035	- -	- -	- -	.023	- -	29.983	.979	.995	.978	29.986
17	29.957	.932	.903	.893	.859	.861	- -	- -	- -	.727	.723	.717	.723	.737	.761	29.775
18	29.743	.756	.769	.781	.818	.863	.863	.869	29.869	- -	.853	.857	.872	.903	.916	29.934
19	29.934	.924	.919	.919	29.986	30.004	.005	- -	- -	29.948	.935	.927	.928	.933	- -	29.946
20	29.951	.956	.965	.959	.955	.950	- -	.945	29.929	.902	.897	.875	.867	.870	.873	29.863
21	29.855	.828	.804	.781	.781	.767	.754	.755	- -	.675	.679	.645	.649	.705	.707	29.708
22	29.731	.750	.763	.779	.794	.836	.849	.859	29.839	.828	.814	.802	.839	.867	.873	29.874
23	29.870	.870	.871	.873	.897	.912	.914	.907	29.886	.848	- -	.843	.845	.899	.899	29.902
24	29.927	.947	.956	.963	29.985	30.012	.034	.030	30.027	30.002	29.995	29.998	30.007	.047	.051	30.065
25	- -	.058	.055	.057	.091	.107	- -	.102	30.066	.066	.029	.015	.009	.011	.008	30.008
26	29.987	.995	.979	.971	.983	.970	.959	.947	29.911	.881	.856	.851	.851	.854	.854	29.854
27	29.822	.790	.774	.767	.735	.689	.636	- -	29.483	.341	.272	.201	.155	.257	.337	29.408
28	29.478	.553	.608	.660	.694	.769	- -	- -	29.849	- -	.900	29.915	30.009	.078	.102	30.123
29	30.154	.148	.160	.182	.257	.319	- -	.357	30.336	.311	.310	.300	.300	.353	.363	30.363
30	30.387	30.392	30.396	30.407	30.429	30.445	30.442	30.430	30.398	30.384	30.362	30.350	30.357	30.366	30.357	30.369
Hourly means.	29.972	29.975	29.976	29.980	29.998	30.012	30.005	30.039	30.012	29.954	29.958	29.938	29.942	29.966	29.976	29.982

Mean time.	0h. 5m.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m	Noon.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.
1861.																
October 1	30.359	30.343	30.341	30.344	30.366	30.381	30.383	30.381	30.334	30.281	30.261	30.243	30.225	30.227	30.227	30.226
2	30.206	.186	.178	.170	.166	.166	.165	- -	30.119	.099	.076	.049	- -	.034	.019	30.039
3	30.018	.009	.000	.000	.048	- -	30.048	- -	29.993	.983	.975	.978	.983	.983	29.986	30.000
4	30.001	.024	.051	.069	.075	.079	.076	- -	- -	- -	- -	29.962	.961	.967	.964	29.959
5	29.932	.927	.923	.913	.913	.933	.930	- -	29.895	- -	.843	.835	.838	.841	.841	29.843
6	29.850	.844	.833	.831	.832	.845	.838	.825	29.807	.765	.764	.756	.779	.797	.827	29.842
7	29.856	.853	.864	.875	.936	.945	.963	- -	29.937	- -	.863	.850	.819	.847	.847	29.843
8	29.809	.838	.865	.883	.890	.939	.939	.964	29.984	.984	.980	29.989	30.060	.073	.093	30.100
9	30.095	.093	.091	.112	.163	.201	- -	- -	30.243	- -	.209	.202	.198	.201	.201	30.201
10	30.202	.189	.209	.207	.213	.210	.207	- -	30.181	- -	.125	.103	.101	.079	.063	30.042
11	30.006	29.984	.962	.944	.964	.964	.945	.931	29.903	.840	- -	.815	.791	.771	.752	29.733
12	29.722	.707	.701	.719	.767	.792	.786	.761	- -	.657	- -	.641	.625	.642	.645	29.650
13	29.753	.613	.595	.617	.683	.707	.736	.751	- -	.778	.791	.793	.882	.919	.939	29.970
14	29.993	30.003	.023	.052	.069	.086	.083	- -	30.042	.009	30.003	29.995	30.017	.035	.042	30.043
15	30.051	.052	.056	.057	.083	.118	.139	- -	30.101	- -	- -	.065	.073	.097	.098	30.098
16	30.115	.113	.111	.111	.111	.136	.126	.132	30.110	- -	- -	.070	.091	.072	.061	30.049
17	30.041	30.019	29.991	- -	.967	.971	.963	- -	29.899	.851	.833	.819	.807	.803	.751	- -
18	29.703	.683	.675	.665	.673	.705	.703	.703	29.692	- -	- -	- -	.704	.721	.733	29.737
19	29.745	.745	.749	.751	.773	.773	.772	.768	29.730	.693	.680	.671	.688	.706	.719	29.733
20	29.763	.786	.820	.865	.919	29.991	30.013	.026	30.015	.021	.031	.030	.065	.100	.109	30.118
21	30.120	.132	.137	.145	.157	.204	.224	- -	30.166	.125	.119	.116	.114	.114	.114	30.122
22	30.086	.063	.049	.023	.033	.023	.031	30.029	29.995	.965	.963	.946	.952	.917	.909	29.884
23	29.831	.817	.802	.783	.763	.739	.735	.723	29.720	.739	.773	.789	.870	.928	.952	29.976
24	29.995	30.016	.038	.062	.103	.155	.176	.205	30.205	.212	.234	.244	.310	.368	.392	30.414
25	30.424	.456	.456	.484	.505	.537	.551	.530	- -	.460	.452	.446	.439	.440	.445	30.415
26	30.395	.378	.368	.352	.342	.337	.331	.292	- -	.190	.180	.162	.162	.166	.147	30.112
27	30.088	.084	.080	.078	.094	.137	.154	.154	30.130	.106	.108	.100	.113	.133	.154	30.164
28	30.168	.172	.176	.178	.178	.200	.188	.172	- -	- -	- -	.040	.027	30.002	29.990	29.972
29	29.952	.935	.922	.912	.903	.901	.874	.841	29.741	.680	.656	.638	.636	.572	.563	29.532
30	29.531	.527	.521	.515	.521	.531	.528	- -	- -	- -	.504	.524	.618	.680	.701	- -
31	29.742	29.766	29.783	29.802	29.866	29.926	29.969	- -	- -	- -	30 009	- -	30.060	30.095	30.126	30.123
Hourly means.	29.986	29.979	29.980	29.984	30.002	30.021	30.019	30.010	29.998	29.972	29.976	29.961	29.967	29.978	29.981	29.998

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Mean time.	0h. 5m.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.	Noon.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m	10h. 5m.
1861. November 1	30.166	30.173	30.178	30.188	30.220	30.234	30.229	30.196	30.180	- -	30.140	30.094	30.060	30.006	29.996	29.988
2	29.913	.803	.767	.723	.682	.632	- -	- -	29.435	.321	.303	.280	.316	.327	.339	29.339
3	29.372	.384	.419	.464	.510	.543	.549	.577	29.558	.549	.561	.579	.610	.638	.652	29.658
4	29.668	.682	.695	.704	.734	.784	.804	.796	- -	.754	.753	.759	.769	.810	.819	29.819
5	29.836	.827	.821	.813	.833	.847	.825	.818	29.769	.691	.697	.687	.681	.662	.648	29.636
6	29.624	.584	.546	.514	.409	.378	.367	.333	29.343	- -	.388	.428	.502	.574	.600	29.620
7	29.680	.690	.720	.757	.779	.841	.851	.857	- -	- -	.855	.858	.902	.919	.937	29.936
8	29.933	.936	.940	.940	.942	.953	.941	.928	- -	- -	- -	.745	.754	.744	.737	29.725
9	29.703	.700	.693	.689	.701	.707	.700	.695	29.696	.712	.713	.742	.781	.849	.875	29.889
10	29.919	.937	.949	29.989	30.009	.055	.108	- -	30.079	.059	.063	.067	.076	.078	.088	30.089
11	30.055	.039	.017	30.001	29.977	.944	.921	.891	29.850	.847	- -	- -	.998	.072	.105	30.121
12	30.157	.162	.173	.182	.235	.288	.300	- -	30.245	.209	.198	.200	.200	.200	.185	30.162
13	30.162	.088	.078	.056	.058	.036	.014	.000	- -	- -	- -	- -	29.844	.840	.853	29.859
14	29.883	.889	.902	.910	.926	.950	.967	.947	29.894	- -	.837	.836	.807	.789	.737	29.719
15	29.650	.634	.616	.606	.601	.628	.626	.640	29.635	- -	.650	.658	.687	.705	.712	29.726
16	29.725	.732	.739	.751	.776	.774	.780	.789	29.783	.797	- -	.807	.864	.889	.904	29.912
17	29.925	.932	.939	.945	.948	.949	.955	.962	29.936	.903	.893	.914	.919	.909	.917	29.905
18	29.905	.906	.907	.911	.921	.923	.935	.947	29.931	- -	.915	.921	29.969	30.000	.015	30.023
19	30.061	.077	.094	.127	.161	.196	.200	.214	30.176	.155	.151	.158	.160	.175	.174	30.168
20	30.156	.164	.149	.150	.168	.178	.158	.166	30.111	- -	.049	.043	.016	.016	.016	30.026
21	30.012	.005	.001	.009	.029	.049	.069	.078	- -	- -	.061	.077	.103	.123	.129	30.134
22	30.118	.118	.119	.120	.101	.117	- -	.110	30.046	29.995	.966	.951	.930	.904	.878	29.835
23	29.794	.700	.677	.651	.611	.637	.615	.621	29.570	- -	.522	.528	.540	.564	.554	29.550
24	29.556	.558	.560	.548	.549	.553	.553	.552	29.500	.482	.490	.496	.547	.564	.570	29.580
25	29.612	.636	.660	.672	.692	.730	.735	.747	29.744	.724	.731	.743	.786	.796	.810	29.837
26	29.849	.865	.876	.888	.933	29.982	30.015	.043	30.042	.057	.065	.085	.113	.131	.147	30.149
27	30.150	.154	- -	- -	.127	.108	- -	- -	30.003	- -	- -	29.941	.910	.918	.936	29.948
28	29.948	.979	29.995	30.000	.007	.074	.113	- -	- -	.037	.027	.035	.001	30.001	29.989	29.963
29	29.898	.846	.812	.788	.740	.732	.720	.691	29.674	.650	- -	.641	.641	.627	.624	29.624
30	29.594	29.574	29.578	29.584	29.602	29.716	29.791	- -	- -	- -	- -	29.909	29.957	30.005	30.029	30.029
Hourly means.	29.868	29.859	29.849	29.851	29.866	29.885	29.883	29.858	29.835	29.820	29.827	29.828	29.848	29.861	29.866	29.866

Mean time.	0h. 5m.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h 5m	Noon.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.
1861. December 1	30.065	30.049	30.041	30.034	30.027	30.017	29.989	29.968	29.911	29.867	29.831	29.800	29.771	29.757	29.753	29.747
2	29.778	.765	.793	.848	.890	.880	.927	.947	29.931	- -	- -	.929	.931	.961	.965	29.939
3	29.944	.954	.973	29.987	30.003	.064	.084	.102	30.077	- -	.066	.089	.163	.184	.216	30.226
4	30.232	.231	.246	.263	.286	.314	.339	.339	30.296	.234	.223	.237	.248	.258	.270	30.258
5	30.236	.236	.244	.258	.280	.298	.296	.288	30.285	.250	.232	.252	.292	.337	.356	30.371
6	30.373	.388	.392	.404	.428	.476	.500	- -	30.482	.466	.477	.467	.463	.483	.483	30.484
7	30.474	.462	.451	.437	.437	.428	.437	- -	30.334	.287	.270	.248	.242	.218	.191	30.180
8	30.140	.130	.128	.105	.087	.073	.087	.088	30.037	30.000	29.978	.964	.968	.981	.972	29.973
9	29.961	.968	.973	.976	29.988	30.009	.022	30.029	29.967	.926	.926	.926	.920	.933	.941	29.947
10	29.918	.915	.912	.909	.903	.929	.950	.959	29.921	- -	.881	.873	.900	.914	.901	29.890
11	29.848	.836	.819	.813	.803	.853	.895	29.950	30.005	- -	- -	.156	.296	.371	.390	30.420
12	30.426	.468	.485	.501	.553	.582	.610	.627	30.614	.603	.597	.597	.606	- -	- -	30.636
13	30.638	.642	.644	.649	.641	.649	.648	.651	30.582	- -	.544	.527	.497	.484	.476	30.449
14	30.431	.395	.372	.343	.344	.350	- -	- -	30.250	.192	.180	.169	.164	.138	.127	- -
15	30.149	.156	.161	.169	.183	.300	.342	.380	30.368	.378	.377	.387	.426	.443	.442	30.436
16	30.419	.392	.379	.369	.331	.300	.266	.248	30.140	- -	- -	30.000	29.991	.989	29.989	30.001
17	30.036	.046	.088	.111	.144	.226	.243	- -	- -	- -	- -	.195	.210	.200	.185	30.170
18	30.124	.095	.088	.079	.073	.082	.105	.103	30.073	.065	.067	.073	.116	.139	.151	30.161
19	30.188	.195	.203	.209	.218	.218	.208	.220	30.149	.090	.081	30.035	29.995	.985	.985	29.971
20	29.931	.887	.889	.875	.850	.857	.886	.881	29.881	.902	.921	29.921	30.030	.077	.096	30.127
21	30.184	.245	.301	.347	.384	.423	.450	.454	30.430	.430	.431	.440	.468	.481	.490	30.500
22	30.481	.484	.484	.421	.484	.477	.467	.460	30.391	.323	.317	.300	.237	.178	.128	30.122
23	29.915	.875	.745	.685	.595	.578	.545	.538	29.448	.468	- -	.500	.572	.584	.613	29.629
24	29.649	.682	.715	.760	.807	.905	.989	- -	30.004	.002	.016	.026	.039	.055	.067	30.077
25	30.075	.098	.111	.113	.146	.172	.203	.206	30.180	.185	.182	.185	.229	.262	.272	30.282
26	30.280	.300	.322	.348	.357	.342	.352	.360	- -	- -	.216	.200	.184	.155	.129	30.125
27	29.983	.976	.940	.923	.900	29.971	30.043	.089	30.099	.152	- -	.182	.289	.321	.343	30.362
28	30.369	.379	.380	.381	.381	.403	.420	.440	30.401	.362	.346	.345	.356	.337	.311	30.303
29	30.272	.240	.216	.200	.185	.160	.174	.142	30.049	30.000	29.990	29.989	30.025	.039	.056	30.053
30	30.053	.065	.070	.076	.091	.133	.173	.164	- -	- -	.163	.165	.197	.220	.223	30.244
31	30.235	30.226	30.220	30.214	30.229	30.198	30.192	30.191	30.083	30.013	29.981	- -	29.907	29.871	29.851	29.835
Hourly means.	30.155	30.154	30.154	30.155	30.162	30.183	30.195	30.186	30.157	30.145	30.172	30.139	30.153	30.145	30.146	30.164

Hosted by Google

DRY THERMOMETER.

Mean time.	0h. 5m.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.	Noon.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.
1861.	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°
January 1	15.0	14.0	12.5	12.0	10.5	11.5	17.0	23.0	33.0	37.0	36.0	35.0	- -	26.0	24.0	23.0
2	20.0	18.0	17.0	17.0	18.0	18.0	20.0	27.0	36.0	39.0	40.0	37.0	36.0	34.5	34.0	34.0
3	34.5	35.0	35.0	35.0	35.0	35.0	37.0	- -	40.0	40.0	- -	40.0	36.0	33.0	32.0	31.0
4	32.0	29.0	30.0	29.0	31.0	31.5	32.5	32.5	37.0	41.0	41.0	47.0	35.0	34.0	33.0	32.0
5	27.0	26.0	25.0	24.0	24.0	25.5	28.0	32.0	36.0	38.0	40.0	37.0	32.0	28.0	27.0	28.0
6	27.0	26.5	26.0	25.0	24.0	24.0	30.0	32.5	37.0	42.0	43.0	42.0	35.0	34.0	33.0	33.5
7	34.0	35.0	36.0	36.0	36.5	38.0	40.0	- -	- -	46.5	46.0	43.0	41.0	41.0	41.0	40.0
8	42.0	41.0	40.5	40.0	39.5	38.0	41.0	44.0	45.5	47.0	47.5	45.0	40.0	36.0	35.0	35.0
9	36.5	36.0	36.0	36.0	36.0	36.5	36.0	35.5	36.0	- -	36.0	36.0	35.5	35.0	35.0	34.0
10	32.0	32.0	32.0	32.0	32.0	31.5	32.5	35.5	41.5	- -	42.0	40.0	35.0	32.0	30.0	28.0
11	26.0	25.0	23.0	21.5	20.5	22.0	24.0	27.5	- -	31.5	30.0	29.0	29.0	30.0	30.0	30.0
12	31.0	31.0	31.5	31.5	31.5	31.5	33.0	33.5	39.0	38.0	38.5	37.0	29.0	25.5	23.0	22.0
13	17.0	15.0	13.5	10.5	10.0	9.5	10.5	13.0	18.0	22.0	24.0	23.5	19.0	16.0	17.0	17.5
14	18.5	21.5	22.5	23.0	24.5	24.0	25.0	28.0	32.0	- -	- -	29.0	30.0	30.0	30.0	30.0
15	29.5	28.0	29.0	29.0	30.0	31.0	32.5	33.5	35.5	- -	- -	34.0	33.5	33.0	33.0	32.5
16	33.5	34.0	35.0	35.0	35.0	35.5	36.0	37.6	43.0	- -	40.0	40.0	36.5	37.0	37.0	40.0
17	41.0	38.0	37.5	37.0	35.0	39.0	43.5	43.5	45.0	45.0	45.0	43.0	38.0	32.5	31.0	30.0
18	29.0	29.0	29.0	29.5	30.0	31.5	- -	33.0	35.0	35.0	35.0	35.0	35.0	35.0	34.5	34.5
19	37.0	36.0	34.0	32.0	31.5	31.0	- -	34.0	40.0	46.0	47.0	46.0	37.0	35.0	36.0	37.0
20	40.0	38.0	36.5	36.0	34.0	36.0	35.0	- -	39.5	42.0	42.0	42.0	36.5	34.0	32.5	30.0
21	26.5	25.0	25.0	24.5	26.0	27.0	30.0	- -	41.0	- -	42.5	38.5	33.0	30.5	29.0	28.0
22	24.0	25.0	24.0	23.0	22.0	23.0	26.0	- -	33.0	35.5	36.0	35.0	31.0	27.0	26.0	25.0
23	22.0	22.0	21.0	21.0	20.0	21.5	25.5	27.0	32.5	- -	32.5	30.0	29.5	30.0	- -	30.5
24	30.5	29.5	29.0	29.0	30.0	33.0	34.0	36.0	39.0	42.0	42.0	41.5	39.5	36.0	36.0	35.0
25	33.5	32.5	32.0	32.0	32.5	33.0	35.0	36.5	42.0	- -	41.0	40.0	37.0	35.5	34.5	34.5
26	35.0	35.0	35.0	34.5	34.0	33.0	31.5	29.0	29.0	29.0	29.0	29.0	27.0	26.5	26.5	26.5
27	25.0	23.0	21.5	20.0	18.0	16.0	22.0	27.0	33.0	38.0	39.0	38.0	28.0	25.0	25.0	25.0
28	24.0	24.5	24.5	25.0	22.5	29.0	34.0	33.0	33.5	35.0	36.5	32.5	30.0	26.5	25.0	23.5
29	26.0	26.0	27.0	28.0	29.0	33.0	38.5	42.0	49.0	47.0	48.0	47.0	40.5	40.0	39.5	39.5
30	42.5	43.0	43.0	41.0	40.0	37.5	34.5	29.0	28.0	29.0	33.0	31.0	25.0	24.0	22.0	22.0
31	20.0	19.0	18.0	17.0	15.5	17.5	23.0	24.0	29.5	- -	34.5	34.0	27.0	22.5	21.5	20.0
Hourly means	29.40	28.79	28.44	27.94	27.68	28.52	30.60	31.89	36.50	38.43	38.82	37.32	33.22	31.13	30.43	30.05

Mean time.	0h. 5m.	2h. 5m.	3h. 5m.	4h. 5m.	6h 5m.	8h. 5m	9h. 5m.	10h 5m	Noon.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m	10h. 5m.
1861.	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°
February 1	17.0	16.5	16.5	16.0	22.0	25.5	29.0	31.5	33.0	40.0	39.0	38.5	36.0	36.5	36.5	37.0
2	36.0	37.0	39.0	41.0	43.0	46.0	47.0	48.0	48.0	- -	50.0	48.0	- -	48.0	48.0	47.0
3	45.0	44.0	43.5	43.0	41.5	40.0	40.0	39.5	40.0	40.0	39.5	39.5	37.0	36.0	36.0	36.0
4	34.5	32.0	31.0	30.0	29.5	30.0	31.5	32.5	43.0	42.0	42.0	42.0	32.0	30.0	29.0	29.0
5	27.5	26.0	25.5	25.0	26.0	29.0	32.5	35.0	39.5	39.0	40.0	40.0	34.5	32.0	31.0	31.0
6	31.5	31.0	31.0	30.5	30.0	31.0	37.0	- -	44.0	- -	- -	46.0	40.0	38.5	38.0	38.5
7	37.0	36.0	34.5	34.5	36.0	39.0	40.0	44.0	54.5	43.5	38.5	31.5	24.5	18.5	15.5	12.0
8	7.0	5.0	4.5	4.0	3.0	4.5	6.0	9.0	17.0	19.5	21.5	22.0	17.0	15.5	15.0	15.0
9	16.0	16.0	16.5	17.0	18.0	22.0	26.0	31.0	36.0	41.0	45.0	44.0	35.5	34.5	35.0	35.5
10	36.0	36.0	36.0	35.5	35.0	37.0	38.0	39.0	42.0	58.0	59.5	60.0	52.0	50.0	50.0	49.0
11	47.0	47.0	48.0	48.5	48.5	50.5	50.0	56.0	58.0	62.0	- -	56.5	56.0	56.0	55.0	54.0
12	54.0	54.0	53.0	52.0	51.0	52.0	54.0	54.5	57.0	62.0	63.0	63.0	54.5	48.5	46.0	46.0
13	44.0	41.0	39.0	35.0	34.5	36.0	- -	46.0	58.5	60.0	60.0	61.0	52.0	43.0	39.0	37.0
14	36.0	36.0	36.0	36.0	37.0	39.0	43.0	48.0	54.0	52.0	53.0	53.0	48.5	46.0	44.5	44.0
15	44.5	44.0	43.5	44.5	44.5	44.0	45.0	50.0	48.5	47.0	52.5	48.0	42.0	40.0	39.5	39.5
16	39.0	37.0	36.0	35.5	32.0	35.0	42.0	- -	58.0	56.0	56.0	53.0	49.0	43.5	41.0	41.0
17	42.0	39.0	38.0	37.0	36.0	35.5	38.5	43.5	41.5	35.0	35.0	35.0	36.0	35.0	34.0	33.0
18	32.0	31.0	29.5	29.0	29.0	32.0	34.0	36.0	39.0	39.5	37.5	36.0	34.0	32.0	31.5	30.0
19	30.0	28.0	27.5	27.0	27.0	29.5	34.5	38.0	40.5	38.0	38.5	37.5	36.0	36.0	37.0	36.0
20	35.0	35.0	34.5	35.0	35.0	36.0	40.0	40.0	47.0	48.5	47.5	50.0	45.0	42.0	40.0	40.0
21	39.0	38.0	37.0	36.0	35.0	35.0	36.0	38.0	39.5	- -	42.0	42.0	39.0	36.0	34.0	33.0
22	30.5	28.0	27.0	26.0	26.5	30.0	35.0	42.0	47.0	52.0	- -	48.5	45.0	43.5	44.0	42.0
23	42.0	42.0	42.0	42.0	40.0	45.5	50.0	55.0	- -	67.0	60.5	60.0	56.0	57.0	56.5	56.0
24	56.0	55.0	54.0	52.0	48.0	46.0	44.0	46.0	44.0	40.0	37.0	37.5	32.0	29.5	28.0	27.5
25	26.5	26.0	25.0	24.0	23.0	27.0	32.0	33.0	38.0	43.0	44.0	44.5	37.5	34.0	34.0	36.0
26	34.0	34.0	34.5	35.0	35.5	39.0	45.0	- -	57.0	- -	63.0	56.0	52.0	48.0	43.0	41.0
27	42.0	38.0	40.0	38.0	34.0	37.0	43.0	48.0	58.0	61.0	- -	67.0	56.5	48.0	44.0	42.0
28	42.5	39.5	38.5	38.0	37.5	42.0	47.0	56.0	66.0	- -	72.0	72.0	60.5	56.0	55.0	54.0
Hourly means.	35.84	34.71	34.32	33.82	33.50	35.54	38.52	41.58	46.24	47.35	47.35	47.57	42.22	39.77	38.57	37.93

Hosted by Google

Mean time.	0h. 5m.	2h. 5m.	3h. 5m.	4h 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.	Noon.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.
1861.	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°
March 1	53.0	49.0	47.0	47.0	49.0	52.5	57.0	68.0	73.5	78.0	76.5	77.0	71.0	68.0	65.0	64.5
2	55.0	54.0	53.0	52.0	53.0	57.0	60.0	- -	78.0	82.0	81.0	81.0	72.0	67.0	- -	61.0
3	57.0	54.0	52.0	50.0	50.0	54.0	59.0	65.0	76.0	78.5	80.0	78.0	72.0	70.0	68.5	68.0
4	70.5	62.0	60.0	58.0	58.0	54.0	54.0	57.0	-	- -	- -	- -	54.0	52.0	52.0	50.0
5	46.5	44.0	43.0	41.0	39.5	37.5	39.0	38.0	41.0	42.0	40.5	39.0	32.5	29.0	27.5	27.0
6	26.0	25.0	24.0	24.0	23.0	28.0	32.0	35.0	43.0	47.0	- -	48.0	43.0	41.0	40.0	39.0
7	43.0	39.0	35.5	33.0	28.5	27.5	28.0	29.0	31.5	34.0	36.0	37.0	34.0	27.5	27.5	28.0
8	26.0	24.0	25.0	26.5	28.0	31.0	39.0	- -	49.5	- -	50.0	48.5	44.0	44.5	45.0	44.0
9	50.0	50.5	50.0	50.0	51.5	49.0	50.0	45.5	44.0	43.5	44.0	46.0	43.0	39.0	38.0	37.5
10	37.5	36.0	36.0	36.0	36.0	36.5	38.0	39.0	41.0	42.0	44.0	45.0	38.0	36.0	35.0	35.0
11	33.0	32.0	31.0	30.0	29.0	30.0	31.5	32.5	- -	40.0	40.0	42.0	39.0	32.5	32.0	32.0
12	31.5	32.5	34.0	35.0	36.0	40.0	46.0	47.0	- -	58.0	59.0	59.0	54.0	50.5	51.5	51.0
13	53.0	53.0	52.0	50.0	51.0	53.5	54.0	57.0	68.0	70.0	- -	68.0	58.0	54.0	52.5	51.0
14	48.0	44.0	40.0	39.0	39.5	37.5	37.5	37.0	35.5	- -	34.0	33.0	31.0	30.0	30.0	29.0
15	29.0	29.0	30.0	30.5	31.0	32.0	33.0	36.0	37.5	37.5	37.0	38.0	38.0	38.5	39.5	39.5
16	37.5	36.0	34.0	33.0	34.5	37.5	42.0	48.0	54.0	60.0	62.0	62.0	57.5	51.5	55.0	54.5
17	50.0	49.5	48.0	47.0	43.0	48.0	50.0	50.5	46.5	43.0	43.5	43.0	40.0	39.5	37.5	- -
18	32.0	30.0	26.0	22.0	21.0	22.0	24.5	26.0	27.0	- -	25.0	23.0	22.0	21.0	21.0	21.0
19	21.0	21.0	21.0	21.0	20.5	21.9	24.0	24.0	28.0	37.0	39.5	39.0	33.0	29.0	27.5	26.0
20	25.5	24.0	23.0	23.0	23.0	32.0	38.0	42.0	46.0	46.5	48.0	46.0	39.0	37.0	37.5	38.0
21	37.5	37.0	36.5	32.0	30.0	30.5	32.0	33.0	36.0	37.5	37.0	35.0	32.0	31.5	31.5	31.0
22	32.5	31.5	31.0	31.0	31.0	34.0	35.0	- -	43.0	47.0	49.0	52.0	47.5	37.5	33.0	32.5
23	30.0	29.0	28.0	27.5	27.0	34.0	40.0	43.5	48.5	59.0	59.0	59.0	55.0	54.0	53.5	54.0
24	50.0	48.0	46.0	45.0	44.0	45.0	47.0	49.0	53.5	56.5	57.0	57.5	52.0	45.0	44.0	40.0
25	35.0	32.0	31.5	31.0	30.0	38.5	43.0	46.0	53.5	60.0	62.0	58.0	53.0	47.0	45.0	45.0
26	46.0	48.0	49.0	50.0	52.0	59.0	58.0	61.0	64.0	67.0	69.0	72.0	65.0	63.0	64.0	64.0
27	64.0	62.0	61.5	61.0	61.0	59.0	58.0	60.0	59.0	64.5	65.0	63.0	57.0	52.0	50.0	48.0
28	47.0	44.5	43.0	42.0	43.0	47.5	51.0	52.0	57.5	57.5	58.0	56.5	56.5	47.0	43.0	41.5
29	39.0	39.0	40.0	41.0	41.0	47.0	52.0	55.0	61.0	66.0	- -	68.0	60.0	55.0	54.0	55.0
30	56.0	56.5	57.5	58.0	59.0	62.0	67.5	66.5	66.5	67.0	62.0	59.0	54.0	48.0	46.5	44.0
31	43.5	44.0	41.0	39.0	40.0	42.0	44.5	49.0	55.0	57.0	59.0	58.5	50.0	45.0	45.0	45.0
Hourly means	42.11	40.64	39.66	38.89	38.81	41.29	44.02	46.12	50.62	54.74	52.48	53.03	48.29	44 69	43.07	43.20

Mean time.	0h 5m.	2h 5m.	3h. 5m	4h 5m.	6h. 5m	8h. 5m.	9h. 5m.	10h. 5m	Noon.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.
1861.	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°
April 1	41.0	39.0	37.0	35.5	35.0	43.5	45.5	43.5	42.0	42.0	41.5	41.5	42.0	42.5	42.5	42.5
2	43.0	43.0	42.0	42.0	42.5	- -	49.0	50.0	53.5	- -	53.0	52.0	47.5	43.0	42.0	39.0
3	37.0	35.0	33.0	34.0	43.0	43.5	- -	53.0	- -	- -	61.0	52.0	47.5	- -	- -	43.0
4	40.0	41.0	40.0	40.0	40.0	42.0	47.0	- -	55.0	56.0	51.0	50.5	48.0	44.0	44.5	40.0
5	35.0	34.0	33.0	32.0	32.0	39.0	45.5	- -	59.0	- -	- -	61.0	54.0	50.0	48.0	47.5
6	46.0	46.5	46.0	46.0	46.0	47.0	- -	54.0	61.0	- -	- -	62.0	53.0	48.0	45.5	45.0
7	43.5	42.0	41.0	41.0	42.0	43.0	44.5	46.5	44.5	44.0	45.0	44.5	44.0	43.0	42.0	42.0
8	41.5	42.0	42.0	42.0	42.0	47.5	48.0	- -	50.0	50.5	49.0	47.5	45.0	43.0	43.0	42.5
9	41.5	42.0	42.5	43.0	43.5	45.0	44.5	- -	48.0	48.0	48.0	46.0	44.5	42.5	42.0	41.0
10	40.0	40.0	40.0	38.5	38.0	37.5	37.5	43.0	54.0	55.5	- -	57.0	53.0	49.0	48.0	45.0
11	43.0	40.0	37.0	35.0	35.0	44.5	50.5	54.0	- -	- -	- -	68.0	68.0	49.0	47.0	45.0
12	43.0	41.5	42.0	42.0	45.0	50.0	53.0	61.0	- -	- -	56.0	56.0	56.0	55.0	55.0	55.0
13	57.0	57.0	57.0	57.5	58.0	57.0	59.0	65.0	- -	- -	70.5	70.0	58.0	50.0	51.0	51.0
14	52.0	52.0	- -	50.0	50.0	56.0	59.0	61.0	64.5	66.0	64.0	66.0	63.0	54.5	54.0	52.0
15	45.0	44.0	43.0	44.0	43.5	52.0	55.0	56.0	48.0	- -	- -	50.0	49.0	47.0	46.0	45.0
16	44.5	43.5	43.0	43.0	43.0	43.5	44.0	45.0	50.0	49.0	48.0	46.5	45.5	43.5	43.0	42.5
17	41.5	40.5	39.5	38.5	39.5	41.0	43.0	44.0	46.5	- -	- -	49.5	48.0	42.0	41.5	39.0
18	37.0	35.0	37.0	38.0	43.0	48.5	47.5	- -	49.0	63.0	- -	66.0	70.0	- -	53.0	53.0
19	52.5	50.0	47.0	45.0	45.0	53.0	52.5	54.5	50.0	- -	51.0	49.5	45.0	43.0	42.0	41.0
20	40.0	38.0	36.0	34.5	34.5	42.5	45.0	- -	53.0	55.0	- -	60.0	- -	47.0	45.0	44.0
21	42.0	41.0	40.0	40.5	40.5	50.0	53.0	56.5	63.0	68.0	72.0	71.0	68.0	58.0	57.0	57.0
22	57.0	57.0	57.0	57.0	56.5	63.0	66.5	69.5	83.0	- -	83.0	78.0	74.0	70.0	66.5	66.0
23	62.5	61.5	61.0	60.0	60.0	66.0	71.0	74.0	88.0	- -	89.0	83.0	79.0	71.0	69.5	69.0
24	68.0	68.0	66.0	63.0	62.0	68.5	72.0	- -	84.0	- -	71.0	66.5	71.0	63.0	61.0	58.0
25	54.5	53.0	52.0	52.0	54.0	62.0	64.0	66.0	70.0	74.0	- -	72.0	66.0	56.0	56.0	55 5
26	52.0	49.0	48.0	47.0	47.5	49.0	64.0	68.0	73.0	75.5	75.5	76.0	70.0	65.0	62.0	61.0
27	58.0	56.0	54.5	53.0	58.0	68.5	74.0	72.0	- -	- -	83.0	81.0	76.0	72.0	70.0	70.0
28	69.0	67.0	66.0	67.5	66.0	71.0	73.0	59.0	63.0	63.0	63.0	63.5	59.0	57.0	53.0	53.0
29	49.0	48.0	46.5	46.0	49.0	62.0	65.0	68.0	73.0	- -	78.0	75.0	72.0	63.0	62.5	60.0
30	57.0	56.5	55.0	54.0	57.5	68.0	74.0	- -	62.0	- -	- -	64.0	61.5	57.0	56.0	55.0
Hourly means.	47.77	46.77	45.66	45.38	46.38	51.86	55.23	57.43	59.48	57.82	62.63	60.85	57.84	52.43	51.33	49.98

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Mean time.	0h. 5m.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.	Noon.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.
1861.	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°
May 1	50.0	49.0	48.0	49.0	52.0	58.0	60.0	60.0	- -	- -	- -	58.0	- -	- -	- -	44.0
2	42.5	42.0	37.5	37.0	38.0	42.5	44.0	47.0	52.0	- -	- -	58.0	- -	43.0	43.0	40.0
3	38.0	37.0	35.5	34.0	38.0	51.0	51.0	49.0	- -	- -	45.0	45.0	43.0	43.5	44.0	42.5
4	41.5	43.0	42.5	42.0	42.0	42.0	40.0	41.0	41.5	48.0	49.0	55.0	52.0	45.0	44.0	43.0
5	41.0	39.0	37.0	35.5	37.5	47.0	52.0	57.0	68.0	68.0	66.0	62.5	58.0	52.0	49.5	48.0
6	47.5	47.0	47.0	48.0	49.0	49.5	50.5	51.5	- -	- -	- -	57.0	62.0	58.0	57.0	56.0
7	52.0	50.0	48.0	47.0	52.0	59.5	62.0	- -	72.0	74.0	- -	72.0	68.0	61.5	59.0	61.0
8	57.0	55.0	54.0	52.5	54.0	66.0	- -	- -	68.0	65.0	- -	65.0	60.0	56.0	54.0	53.0
9	50.0	46.0	44.0	42.0	46.0	55.0	59.0	- -	- -	- -	- -	69.0	67.0	59.0	55.0	52.0
10	46.0	46.0	46.0	45.5	50.0	60.0	63.0	- -	- -	- -	- -	55.5	58.0	56.0	56.0	55.0
11	52.0	51.0	50.0	50.0	51.0	56.0	- -	- -	70.0	- -	- -	82.0	70.0	65.5	64.0	63.0
12	60.0	56.0	54.5	50.0	56.5	64.0	68.0	69.0	75.0	79.0	80.0	76.0	71.5	65.5	62.5	63.0
13	62.0	61.0	60.0	60.0	61.5	70.0	69.5	76.0	80.0	- -	82.0	83.0	78.0	72.0	71.0	70.0
14	66.0	65.0	65.0	65.0	68.0	71.0	- -	- -	81.5	- -	- -	84.0	76.0	70.0	68.0	66.0
15	61.0	59.0	57.0	56.0	58.0	64.0	66.5	- -	76.0	- -	76.0	74.5	70.0	63.5	61.0	60.0
16	58.0	58.0	58.0	58.0	58.0	65.0	64.0	66.0	- -	- -	- -	75.0	68.0	61.0	59.0	58.0
17	54.0	50.0	50.0	49.0	51.0	56.0	- -	- -	66.0	- -	- -	70.0	68.0	57.0	55.0	53.5
18	50.0	49.0	49.0	46.0	46.5	55.0	57.0	- -	- -	- -	70.0	68.0	67.0	59.0	57.0	55.0
19	53.0	50.0	49.0	48.0	51.0	55.0	- -	66.0	67.0	62.0	63.0	60.0	59.0	54.0	53.0	53.0
20	52.5	52.0	52.0	53.0	53.0	55.0	56.0	54.0	55.0	- -	- -	55.5	55.0	52.0	52.0	52.0
21	50.0	50.0	49.0	49.0	52.0	58.0	- -	62.0	70.0	74.0	74.0	69.0	65.0	59.0	57.0	55.0
22	53.0	50.0	49.0	49.0	51.0	60.0	63.0	68.5	70.0	73.0	- -	71.5	69.0	60.0	56.0	55.5
23	52.0	49.0	48.0	47.0	48.5	58.0	65.0	67.0	74.0	- -	- -	95.0	68.5	60.0	60.0	58.5
24	57.0	56.0	56.0	52.0	55.0	61.5	- -	- -	73.0	75.0	75.5	75.5	- -	65.5	63.0	61.0
25	60.0	58.0	58.0	58.0	61.0	63.0	57.0	- -	72.0	- -	- -	83.0	78.0	70.0	70.0	69.0
26	63.5	64.0	63.0	62.5	64.5	74.0	75.0	79.5	85.0	89.0	88.0	86.5	81.0	75.0	71.0	69.0
27	69.0	69.0	68.0	68.0	72.0	79.0	83.0	- -	82.0	- -	75.0	72.0	69.5	66.0	64.0	61.0
28	58.0	59.0	57.0	56.0	56.0	61.0	63.0	- -	70.0	74.0	- -	73.0	72.0	62.0	60.0	56.0
29	56.0	58.0	58.5	59.0	61.0	63.0	67.0	- -	70.0	75.0	71.0	70.5	- -	62.0	58.5	56.0
30	52.0	47.5	46.0	46.0	49.0	60.0	63.0	65.0	71.0	- -	- -	74.0	72.0	63.0	62.0	61.0
31	57.0	55.0	52.5	51.0	55.5	64.0	- -	72.0	78.0	80.0	79.0	79.0	75.5	67.0	66.0	64.0
Hourly means.	53.60	52.27	51.26	50.48	52.85	59.45	60.80	61.79	70.29	72.00	70.96	70.13	66.70	60.10	58.38	56.58

Mean time.	0h. 5m.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m	8h. 5m.	9h. 5m.	10h. 5m.	Noon.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.
1861.	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°
June 1	62.0	60.0	59.5	59.0	62.0	69.5	77.0	77.0	83.0	87.0	83.0	86.0	84.0	75.0	69.0	63.0
2	67.0	66.0	65.5	65.0	66.0	71.0	76.5	78.5	86.5	89.0	89.0	89.0	81.5	76.5	75.5	74.0
3	74.0	74.0	72.0	70.0	72.5	73.0	76.0	- -	69.0	- -	68.5	66.0	66.0	65.5	65.5	64.0
4	66.0	64.5	64.5	64.5	63.0	65.0	63.0	64.0	- -	65.0	62.5	62.0	60.0	56.0	55.0	55.0
5	53.0	53.0	53.0	53.5	54.0	53.0	55.5	65.0	63.0	- -	- -	69.0	65.0	62.0	61.0	60.5
6	53.0	53.0	53.0	53.5	54.0	53.0	55.5	65.0	63.0	- -	- -	69.0	65.0	62.0	61.0	60.5
7	60.0	61.0	61.0	61.0	63.0	65.0	68.0	- -	72.5	77.5	72.0	75.0	70.0	66.0	66.0	64.0
8	64.0	63.0	62.0	61.0	65.0	70.0	71.0	- -	82.0	75.0	74.5	75.0	77.5	63.0	62.0	62.0
9	61.0	60.0	59.0	59.0	62.0	65.0	68.0	71.0	78.0	80.0	79.0	79.5	75.0	66.5	66.0	65.0
10	64.0	63.0	62.0	61.0	65.0	71.0	73.0	77.0	84.0	- -	- -	87.0	80.5	77.0	76.0	74.0
11	73.0	72.0	71.0	70.0	73.0	76.0	- -	78.0	88.0	- -	86.0	86.0	84.0	76.0	77.0	77.0
12	73.0	70.0	70.0	68.0	71.0	79.0	84.0	89.0	92.5	93.0	- -	90.5	- -	79.0	75.0	74.0
13	71.0	- -	67.0	65.0	66.0	73.5	75.5	78.0	82.0	81.5	82.0	82.0	79.0	70.0	67.0	66.0
14	66.0	- -	62.0	58.0	62.0	70.0	75.0	- -	83.0	84.0	85.0	85.0	82.0	75.0	73.0	72.0
15	70.5	70.0	71.0	72.0	75.0	82.0	84.0	- -	94.0	98.0	96.0	95.0	87.0	83.5	84.0	83.0
16	82.0	78.0	76.5	75.0	75.0	82.0	85.0	90.0	87.0	89.0	85.0	85.0	78.0	75.5	73.5	73.0
17	65.0	65.0	64.0	63.0	63.0	69.0	72.0	74.5	72.5	- -	- -	76.0	74.0	66.0	66.0	65.0
18	64.5	63.5	63.0	62.5	64.5	72.0	74.0	78.0	81.0	83.0	85.0	84.0	78.0	70.5	68.0	67.0
19	65.0	63.0	63.0	63.0	63.5	69.0	- -	76.0	85.0	- -	85.0	85.0	83.0	73.0	- -	72.0
20	71.0	70.0	70.0	70.0	72.0	79.0	82.0	- -	89.0	88.0	- -	88.0	86.0	79.0	77.0	76.0
21	73.0	71.0	70.5	70.0	73.0	79.0	84.0	84.0	90.0	97.5	- -	95.5	90.0	85.0	- -	83.0
22	81.0	80.0	79.0	79.0	76.0	80.0	- -	83.0	92.0	92.0	89.0	88.0	85.0	77.0	75.0	72.0
23	70.0	68.0	67.0	66.5	69.0	79.0	85.5	87.0	93.0	95.0	93.5	92.0	88.0	80.5	- -	78.0
24	77.0	76.0	74.0	72.0	71.0	75.0	77.0	79.0	83.0	85.0	85.0	84.5	82.0	72.0	70.0	68.0
25	65.0	64.0	63.0	65.0	65.0	78.0	81.5	- -	87.0	- -	- -	89.0	85.0	77.0	76.0	75.0
26	73.0	73.0	73.0	73.0	72.0	75.0	79.0	- -	88.0	94.0	94.0	91.0	80.0	76.0	75.0	75.0
27	75.0	74.0	72.0	72.0	73.0	76.0	79.5	- -	87.0	- -	- -	88.0	86.0	76.0	74.0	73.0
28	72.0	69.0	69.0	69.0	70.0	79.0	82.0	86.0	92.0	- -	90.0	90.5	85.0	79.0	78.0	78.0
29	74.0	71.0	71.0	71.0	69.0	74.0	76.0	78.0	85.0	82.0	83.0	82.0	79.0	74.0	72.0	70.0
30	64.0	64.0	65.0	66.0	67.0	75.0	76.0	78.0	77.0	67.0	67.0	72.0	70.0	66.0	65.5	64.0
Hourly means.	68.30	67.11	66.42	65.92	67.22	72.57	75.39	77.90	83.07	85.12	82.57	82.88	78.81	72.65	70.48	70.10

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Mean time.	0h. 5m.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.	Noon.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.
1861.	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°
July 1	66.0	67.0	67.5	68.0	70.0	71.0	74.0	73.0	85.0	86.5	- -	82.0	75.0	64.0	62.0	64.0
2	65.0	62.0	60.0	60.0	61.0	65.5	67.0	69.0	73.0	74.0	- -	73.0	- -	68.0	- -	61.5
3	60.0	55.5	56.0	56.0	61.0	67.0	70.0	76.0	79.0	- -	81.5	82.0	80.0	72.0	71.0	71.0
4	67.0	63.0	62.0	61.0	63.0	72.0	77.0	82.0	89.0	88.0	87.0	86.5	- -	- -	71.0	70.0
5	67.0	66.0	64.0	63.0	63.0	72.0	75.0	- -	85.0	87.0	87.5	86.0	82.0	77.0	76.0	75.0
6	74.0	73.0	72.5	72.0	73.0	75.0	- -	83.0	83.0	- -	77.0	81.0	86.0	75.0	74.0	73.0
7	74.0	72.5	72.0	72.0	73.0	78.0	80.0	83.5	88.0	91.5	90.5	90.5	89.0	80.0	80.0	79.0
8	77.0	73.0	72.5	72.0	75.0	82.0	- -	- -	95.5	95.5	95.0	93.0	86.0	81.0	78.5	77.0
9	75.0	73.0	73.0	73.0	75.0	78.0	84.0	- -	95.0	- -	98.5	96.0	73.0	73.0	73.0	73.0
10	72.0	70.5	70.0	69.0	71.0	77.0	80.0	- -	89.0	- -	91.5	91.5	78.0	67.0	67.0	67.0
11	67.0	67.0	68.0	66.0	66.0	71.5	73.0	- -	81.0	- -	80.5	82.0	69.0	68.0	68.0	66.0
12	64.0	62.0	61.5	61.0	63.0	68.0	70.5	- -	77.5	78.0	79.0	79.0	77.0	70.0	68.5	67.0
13	64.0	65.0	64.5	65.0	63.0	64.5	65.0	- -	75.0	78.0	73.0	73.0	67.0	65.0	64.0	64.0
14	62.0	60.0	59.0	60.0	62.0	67.0	69.0	73.0	74.0	77.0	74.0	73.5	- -	67.0	65.0	63.0
15	61.5	61.0	60.0	59.5	62.0	67.0	74.0	- -	80.0	- -	80.0	80.0	77.0	71.0	69.5	68.0
16	68.0	67.0	66.0	66.0	67.5	74.5	77.0	78.0	83.0	- -	77.0	83.0	77.0	72.0	70.0	69.0
17	67.0	66.0	64.5	64.5	67.0	75.0	77.0	78.0	85.0	- -	- -	86.0	82.0	75.0	73.0	72.0
18	69.5	68.0	68.0	68.0	71.0	76.0	83.0	85.0	88.0	- -	93.0	93.0	- -	79.0	76.5	76.0
19	74.0	73.0	73.0	73.0	72.0	78.5	78.0	- -	89.0	- -	- -	87.0	84.0	79.0	77.0	76.0
20	74.0	74.5	74.0	74.0	74.0	78.0	85.0	84.0	- -	89.0	89.0	88.5	82.5	78.0	74.5	72.0
21	72.0	69.5	67.5	68.0	71.0	70.0	72.0	- -	81.5	83.0	81.0	83.5	80.0	76.0	71.0	71.0
22	70.0	68.5	68.0	67.0	69.0	69.0	71.0	69.0	- -	- -	64.5	63.0	61.5	61.0	61.0	61.5
23	61.0	60.0	60.5	61.0	61.0	66.0	69.0	71.0	76.0	78.0	78.0	77.0	75.0	68.0	66.5	64.5
24	63.0	61.5	60.0	59.0	61.0	70.0	74.0	76.0	80.0	- -	- -	80.0	- -	70.0	68.0	67.5
25	65.0	62.0	61.0	61.0	61.5	70.0	74.0	77.5	81.0	- -	83.5	82.0	78.0	74.0	73.0	- -
26	65.0	64.0	62.5	61.0	60.0	70.0	78.0	- -	87.0	- -	87.5	85.0	79.0	77.0	75.0	73.0
27	- -	69.0	68.0	64.0	69.0	77.0	78.5	82.0	86.0	- -	84.5	80.5	76.0	71.0	69.0	70.0
28	69.0	65.5	64.0	63.5	64.0	74.0	75.0	76.0	85.0	- -	89.0	90.5	86.0	69.5	70.0	70.0
29	69.5	69.0	69.0	72.5	73.5	78.5	82.5	- -	91.0	93.0	- -	88.0	82.0	78.0	76.0	74.0
30	72.0	70.0	69.0	68.0	- -	75.0	78.0	82.0	88.0	- -	90.0	- -	83.0	77.0	75.5	74.0
31	72.5	72.0	71.0	70.0	71.0	79.5	82.0	84.0	89.5	- -	- -	93.0	88.0	82.0	81.0	81.0
Hourly means.	68.23	66.77	66.08	65.74	67.12	72.79	75.60	78.00	84.07	84.50	83.83	83.63	78.96	72.82	71.46	70.33

Mean time.	0h. 5m.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.	Noon.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.
1861.	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°
August 1	77.0	76.0	76.0	75.5	74.0	75.0	74.0	76.0	86.0	90.0	88.0	89.0	86.0	78.0	77.5	76.0
2	75.0	74.5	74.0	73.0	- -	81.0	82.0	86.0	- -	92.0	89.0	89.5	86.0	81.0	78.5	78.0
3	75.0	74.0	73.0	72.5	75.0	81.0	84.0	87.5	88.0	- -	- -	88.5	86.0	80.0	79.5	78.0
4	77.0	77.0	76.5	76.0	77.0	81.0	84.0	85.5	90.0	93.0	93.5	90.0	- -	82.0	81.5	80.0
5	78.0	77.0	76.0	75.5	75.0	82.0	86.0	- -	95.0	- -	95.5	94.5	82.5	77.5	76.0	76.0
6	76.0	76.0	76.5	76.0	76.0	81.0	85.0	86.5	87.0	90.0	90.0	89.5	87.0	78.5	77.0	76.0
7	74.5	74.0	74.0	74.0	75.0	82.0	85.0	- -	95.0	- -	- -	- -	84.5	80.0	80.0	80.0
8	78.0	78.0	78.0	78.0	78.0	83.0	86.0	- -	93.0	94.0	94.0	93.5	89.0	83.0	83.0	81.0
9	79.0	78.0	77.5	77.0	75.0	77.0	81.0	87.0	89.0	92.0	92.5	87.0	74.5	74.0	74.0	73.5
10	73.0	73.0	73.5	73.5	74.0	78.0	81.5	- -	87.0	89.0	91.0	92.0	86.0	82.0	82.0	81.5
11	80.5	80.0	80.0	79.5	79.0	82.0	86.0	92.0	93.5	94.0	93.0	91.0	80.0	74.0	74.0	73.0
12	75.0	73.5	73.5	74.0	75.0	76.0	76.0	78.5	- -	79.0	81.5	80.0	75.0	74.5	74.0	73.5
13	74.0	76.0	75.5	75.0	77.0	75.0	- -	- -	92.5	- -	- -	- -	68.0	61.0	61.0	59.0
14	58.0	59.0	59.0	58.5	59.0	68.0	65.0	- -	- -	- -	70.0	69.0	67.5	65.0	62.0	61.0
15	58.5	57.0	56.0	55.0	57.0	65.0	69.0	70.0	78.0	- -	- -	77.0	- -	65.0	65.0	64.0
16	62.0	60.0	59.5	59.0	61.0	68.0	69.0	- -	77.0	71.0	70.0	69.0	66.0	65.0	65.0	64.0
17	65.0	65.0	65.0	65.5	64.0	66.0	67.0	- -	68.0	74.5	76.0	72.0	72.0	70.0	69.0	69.0
18	69.0	68.5	69.0	69.5	69.0	72.0	74.0	80.0	77.0	78.5	81.0	80.0	78.0	74.0	73.0	72.5
19	72.5	72.0	72.0	72.0	72.0	74.5	77.0	77.0	77.0	75.0	76.0	76.5	75.0	73.0	72.0	73.0
20	72.5	71.0	69.0	67.0	69.5	71.0	72.5	76.0	86.0	80.0	80.0	80.0	75.0	69.0	67.0	66.0
21	65.0	63.0	61.5	60.0	61.0	68.0	72.5	- -	- -	81.5	78.0	77.0	- -	70.0	69.5	67.0
22	68.0	69.0	69.0	69.0	69.0	74.0	78.5	- -	85.5	- -	- -	84.0	78.0	75.0	72.0	65.0
23	63.0	62.0	64.0	63.0	63.0	65.0	69.5	- -	75.0	77.0	- -	75.5	- -	64.0	62.0	61.0
24	60.0	59.0	58.0	57.0	59.0	65.0	69.5	72.0	76.0	- -	81.0	82.0	82.0	68.0	66.0	65.0
25	62.0	62.0	60.0	60.0	61.0	68.0	74.0	77.0	82.0	82.0	82.0	81.0	75.0	69.5	67.0	66.0
26	65.0	62.5	62.0	60.5	61.0	68.0	74.5	77.0	82.0	84.5	82.0	79.0	73.0	71.0	69.0	66.0
27	65.5	65.0	65.0	65.0	66.0	73.0	79.0	79.0	81.0	- -	- -	77.0	72.5	72.0	71.0	- -
28	69.0	69.0	68.5	69.0	69.0	73.0	76.0	- -	79.0	78.5	77.0	75.0	72.0	71.0	70.0	70.0
29	70.0	69.0	69.0	69.0	70.0	72.0	71.5	73.0	74.0	- -	- -	77.0	72.0	68.0	67.5	67.0
30	66.0	65.5	66.0	66.5	66.5	71.5	72.0	- -	79.5	- -	- -	85.0	76.0	72.0	70.5	70.0
31	67.0	65.0	62.0	60.0	60.5	65.0	70.0	- -	72.0	78.0	79.0	79.0	74.0	63.5	61.0	60.0
Hourly means.	70.00	69.37	68.98	68.55	68.92	73.58	76.37	80.00	83.15	83.67	83.64	82.05	77.50	72.60	71.50	70.40

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DRY THERMOMETER.

Mean time.	0h. 5m.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.	Noon.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.
1861.	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°
September 1	67.5	57.0	56.0	55.5	57.0	64.0	69.0	72.0	76.0	76.0	77.0	78.0	74.0	65.5	65.0	63.0
2	60.5	60.0	60.0	60.0	58.5	66.0	71.0	- -	79.0	82.0	83.0	84.0	78.0	71.0	70.0	69.0
3	69.0	69.0	68.0	67.0	67.0	72.0	75.0	79.0	- -	- -	- -	89.0	84.0	77.0	75.0	79.0
4	73.0	72.0	71.0	70.0	69.5	73.5	80.0	- -	87.0	- -	- -	81.0	76.0	72.0	71.0	70.0
5	69.0	68.0	67.0	63.5	63.0	65.5	65.0	- -	- -	- -	- -	65.0	66.0	67.0	67.0	67.0
6	67.0	67.0	67.0	67.0	68.0	71.0	73.0	- -	80.0	- -	- -	81.5	74.0	70.5	69.5	69.0
7	67.5	68.0	68.0	65.0	65.0	71.0	78.0	- -	85.0	- -	85.0	- -	- -	72.0	70.0	70.0
8	68.0	67.0	66.0	65.0	65.0	68.0	72.0	74.0	79.5	77.0	78.0	76.0	73.0	69.5	68.0	67.0
9	65.0	65.5	65.5	65.0	65.5	71.0	- -	72.0	78.0	- -	84.0	83.5	81.0	71.5	70.0	69.0
10	69.0	68.0	66.5	64.0	66.0	69.0	71.0	- -	82.0	- -	85.0	82.5	- -	73.0	70.0	69.0
11	71.0	71.5	72.0	72.0	74.0	74.5	78.0	84.0	81.0	80.0	76.0	76.5	76.5	76.5	76.5	76.0
12	69.0	68.0	67.5	67.0	66.0	71.0	73.0	73.0	- -	- -	82.0	82.0	- -	70.0	67.0	66.0
13	64.5	65.0	65.5	64.0	63.0	68.0	72.0	- -	81.0	- -	83.0	- -	76.0	68.0	67.0	65.0
14	63.0	62.0	61.0	60.0	60.0	64.0	69.5	- -	- -	- -	85.0	84.0	76.0	71.0	70.5	69.0
15	68.0	68.0	68.5	67.0	66.5	72.0	76.0	79.5	84.5	90.0	89.0	87.0	80.0	76.5	76.0	75.0
16	75.0	73.0	70.0	70.0	72.0	76.0	- -	- -	- -	86.0	- -	82.5	75.0	73.0	73.0	72.0
17	71.0	71.0	71.0	71.5	71.5	73.5	- -	- -	- -	85.5	84.0	78.0	71.0	70.0	70.0	68.0
18	67.0	66.0	65.0	64.5	64.0	66.0	67.0	69.0	79.0	- -	77.0	75.0	72.5	68.0	65.5	65.0
19	64.0	65.0	65.0	65.0	66.0	68.0	71.5	- -	- -	84.5	82.0	83.0	74.0	69.0	- -	68.0
20	65.0	64.0	63.5	63.0	63.0	69.5	- -	79.0	85.0	89.5	87.0	88.0	76.0	73.0	71.0	70.0
21	69.0	68.0	67.0	66.0	66.5	72.0	75.0	79.0	- -	82.5	85.0	80.0	74.0	68.0	66.0	64.0
22	63.5	61.5	60.0	59.5	59.0	61.0	63.0	63.0	66.5	66.0	68.0	69.0	60.0	58.0	57.0	56.0
23	55.0	53.0	53.0	52.5	51.0	59.5	61.5	67.0	73.5	78.0	- -	78.0	69.0	66.0	63.0	62.0
24	58.0	56.0	55.0	54.0	54.0	60.0	65.0	70.0	76.5	76.0	81.0	77.0	68.0	61.0	60.0	57.0
25	- -	56.0	55.0	54.0	52.0	58.0	- -	68.0	76.0	77.0	78.0	77.5	69.5	65.0	64.0	63.5
26	64.0	62.0	60.0	60.0	60.5	65.0	68.0	71.5	78.0	78.0	77.0	78.0	70.0	68.0	68.0	67.5
27	66.0	65.0	64.5	64.0	63.5	65.0	66.0	- -	72.0	77.0	78.0	76.0	75.5	75.5	64.0	63.0
28	60.0	60.0	59.0	57.5	56.0	59.0	- -	- -	64.5	- -	66.0	68.0	59.0	56.0	54.0	52.5
29	50.0	49.0	47.5	46.5	45.5	52.0	- -	60.0	63.0	66.0	67.5	68.0	60.0	52.5	51.0	50.0
30	47.0	47.0	45.0	43.5	43.0	51.0	52.0	62.0	68.0	72.0	70.5	71.0	60.0	57.0	53.5	52.5
Hourly means.	64.67	63.75	63.00	62.12	62.05	66.53	70.07	71.88	77.05	79.06	79.50	78.54	72.15	68.37	66.64	65.80

Mean time.	0h. 5m.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.	Noon.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.
1861.	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°
October 1	50.0	49.5	49.0	48.0	47.0	53.0	54.0	60.0	74.5	76.0	76.0	76.0	65.0	59.0	58.5	59.0
2	60.0	59.0	59.0	60.0	61.0	67.0	68.0	- -	71.0	72.0	71.0	70.0	- -	65.0	65.0	63.5
3	62.5	62.0	61.0	58.5	58.0	63.0	- -	74.0	- -	81.5	82.0	81.0	74.0	67.0	66.0	64.5
4	63.0	61.5	60.0	59.0	58.5	65.0	69.5	- -	- -	- -	- -	82.0	74.0	70.5	69.0	68.0
5	67.0	67.0	66.5	66.5	66.0	70.5	76.5	- -	84.5	- -	90.0	88.0	78.0	75.0	74.0	73.0
6	71.0	70.0	69.0	68.0	68.0	73.0	75.0	80.0	86.0	89.0	88.0	88.0	80.0	79.0	78.0	76.0
7	74.0	74.0	73.5	73.0	71.0	76.0	76.0	- -	83.0	- -	83.0	78.0	71.0	68.5	69.0	69.0
8	68.0	64.0	60.0	58.0	58.5	60.0	62.0	62.0	65.0	66.0	66.0	66.0	60.0	57.0	56.5	56.0
9	54.5	54.0	54.0	54.0	54.0	55.0	- -	- -	58.0	- -	62.5	62.0	61.0	60.0	59.0	59.5
10	59.5	59.0	58.5	58.0	58.0	60.0	62.0	- -	62.0	- -	60.0	59.5	58.5	57.0	57.0	57.0
11	57.0	57.0	57.5	58.0	58.0	60.0	63.0	65.0	74.0	73.0	- -	74.0	66.0	63.0	61.5	62.0
12	62.0	57.0	54.0	52.0	52.0	52.5	56.0	56.0	- -	56.0	- -	64.0	56.5	55.0	55.0	55.0
13	54.0	53.0	52.0	52.5	57.0	56.5	58.5	62.5	- -	64.0	64.0	63.0	56.0	53.5	52.5	50.0
14	45.0	44.0	43.0	42.0	41.0	48.0	52.0	- -	64.0	68.0	68.0	69.0	57.0	55.0	54.0	53.0
15	50.0	47.5	47.0	47.0	46.5	52.0	56.5	- -	64.0	- -	- -	75.0	64.0	59.5	58.0	56.0
16	55.0	54.0	52.0	50.0	50.0	55.5	60.0	64.0	72.0	- -	- -	68.0	61.5	60.0	59.0	59.0
17	57.0	59.0	60.0	- -	61.5	65.0	66.0	- -	76.0	76.0	74.5	74.0	70.0	68.0	67.5	- -
18	68.0	68.0	68.0	68.0	68.0	69.5	73.0	76.0	77.0	- -	- -	- -	70.5	68.0	67.0	67.0
19	67.0	66.0	65.5	65.0	64.0	69.0	70.0	72.0	76.0	78.0	77.0	75.0	71.0	70.0	69.0	68.0
20	67.5	65.0	64.0	63.0	62.0	64.5	64.0	64.0	69.0	68.0	67.0	65.0	58.0	54.5	53.0	52.0
21	51.5	54.0	52.5	51.0	50.0	51.0	53.0	- -	64.0	62.0	59.0	58.5	54.0	52.5	52.0	52.0
22	52.0	53.0	54.0	54.0	55.0	53.0	54.0	55.0	58.0	59.0	58.5	58.0	56.5	56.0	56.0	56.0
23	56.0	55.5	55.0	55.0	55.0	58.0	60.0	64.0	65.0	60.0	60.0	59.0	51.0	46.5	46.0	45.0
24	43.0	42.5	42.0	42.0	40.5	43.0	48.0	50.5	55.0	56.0	56.0	56.0	46.0	43.5	41.0	39.0
25	37.5	37.0	36.0	34.0	35.0	41.0	46.0	55.0	- -	58.0	59.0	57.0	51.0	50.0	50.0	47.0
26	47.0	47.0	47.5	48.0	49.0	52.5	54.0	60.0	- -	65.5	64.0	62.0	58.0	57.0	57.0	57.0
27	56.0	56.0	56.0	56.0	56.0	54.0	55.0	55.5	59.0	60.0	59.5	59.0	52.0	48.0	44.0	43.0
28	39.0	38.0	37.0	36.0	35.0	39.0	42.0	45.0	- -	- -	- -	54.0	44.0	40.5	39.0	38.0
29	37.5	36.0	36.0	36.0	36.0	39.0	44.5	51.0	60.0	64.0	65.0	64.0	51.0	49.0	46.0	46.0
30	44.5	46.0	47.0	48.5	49.0	49.5	59.0	- -	- -	- -	68.0	64.0	58.5	53.0	52.0	- -
31	47.0	44.5	43.0	43.0	43.0	45.0	50.5	- -	- -	- -	60.0	- -	49.5	47.0	44.0	43.5
Hourly means.	55.58	54.84	54.18	53.47	53.66	56.77	59.59	61.66	68.95	67.60	68.25	67.90	60.78	58.31	57.27	56.34

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Mean time.	0h. 5m.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.	Noon.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.
1861.	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°
November 1	41.5	39.0	38.0	37.0	37.0	40.0	44.0	53.0	62.0	- -	59.5	55.0	54.0	52.0	51.0	51.0
2	52.5	56.0	57.0	58.0	60.0	61.0	- -	- -	65.0	65.0	64.5	65.0	61.0	58.5	59.5	59.5
3	55.0	54.0	52.5	51.0	50.0	52.0	55.0	58.0	61.0	61.5	57.0	55.0	51.5	47.0	46.5	47.5
4	46.5	45.0	45.0	45.0	45.0	48.0	51.0	56.0	- -	61.0	64.0	60.0	52.0	47.5	45.0	44.0
5	41.5	40.0	38.0	37.0	37.0	45.0	49.0	54.0	57.0	60.0	59.0	59.0	48.5	46.0	45.5	46.0
6	49.0	49.0	49.0	49.0	49.0	51.0	52.0	56.0	55.0	- -	50.5	52.0	51.0	48.0	51.0	51.0
7	48.0	47.0	46.5	46.0	45.0	46.0	49.0	51.0	- -	- -	55.0	54.0	46.0	41.0	39.0	37.0
8	36.0	35.0	34.0	33.5	33.5	39.0	47.0	50.0	- -	- -	- -	62.0	53.0	51.5	49.0	48.0
9	46.0	45.0	44.0	44.0	45.0	48.0	51.0	57.0	55.0	49.0	48.0	47.0	46.0	46.0	46.0	44.0
10	42.0	40.0	38.5	37.0	36.5	37.0	40.0	- -	49.0	53.5	53.5	51.0	46.0	44.0	43.0	42.5
11	45.0	45.0	46.0	46.0	48.0	51.0	55.5	56.0	63.5	66.0	- -	- -	56.5	51.0	48.0	49.5
12	49.0	45.5	42.0	40.0	40.0	44.0	46.0	- -	55.0	57.0	57.0	57.0	47.5	42.0	44.0	42.0
13	40.0	40.0	39.5	39.0	39.0	41.0	47.0	51.0	- -	- -	- -	- -	57.0	54.0	52.0	52.0
14	53.0	52.0	51.0	50.0	47.5	46.0	54.0	55.0	58.0	- -	56.0	53.0	50.5	50.0	49.0	48.0
15	48.0	46.0	43.5	41.0	40.0	40.0	42.0	42.0	42.0	- -	42.0	41.5	39.0	39.0	38.0	37.0
16	39.0	37.5	36.0	36.5	37.0	36.0	38.0	40.0	42.0	43.0	- -	41.0	39.0	38.0	37.5	37.0
17	39.0	39.0	39.0	39.0	39.5	41.0	44.0	45.0	47.5	50.0	47.0	45.0	40.0	40.0	40.0	40.5
18	40.0	39.0	38.0	37.5	37.5	39.0	43.5	45.5	47.5	- -	48.5	48.0	42.0	40.0	39.5	39.5
19	37.0	36.0	34.5	33.0	33.0	33.0	38.0	41.0	47.0	50.0	49.5	48.0	38.0	34.0	32.0	31.0
20	30.0	29.5	30.0	31.0	31.0	34.0	38.0	42.0	43.5	- -	46.0	45.0	43.0	42.5	42.0	42.0
21	41.0	40.0	40.0	39.0	39.0	38.0	44.0	49.0	- -	- -	55.0	53.0	46.0	41.0	40.0	38.0
22	38.0	36.0	35.5	34.0	34.0	34.5	- -	46.0	51.0	55.5	52.0	48.0	45.0	43.0	44.0	44.0
23	44.0	45.0	45.0	45.0	45.0	41.0	41.0	40.0	44.0	- -	47.0	45.0	37.0	40.0	39.5	39.0
24	34.0	32.0	31.0	30.5	32.0	36.0	40.0	43.0	48.0	45.0	43.0	40.5	37.0	33.0	32.5	34.5
25	34.0	32.0	31.0	30.0	29.0	30.0	34.0	37.0	41.0	41.5	41.5	40.0	37.0	37.0	38.0	38.0
26	33.0	32.5	32.5	31.5	31.5	35.5	37.5	43.0	46.5	45.0	45.5	43.0	37.0	34.0	33.5	33.0
27	30.0	28.0	- -	- -	30.0	33.0	- -	- -	42.0	- -	- -	41.0	39.0	39.0	39.0	39.0
28	37.0	33.5	32.0	32.0	31.0	32.5	37.0	- -	- -	55.0	52.5	47.5	45.0	43.0	43.0	41.0
29	44.0	44.0	44.0	45.5	46.0	54.0	55.5	61.0	67.0	65.0	- -	64.0	62.0	58.0	57.0	56.0
30	48.0	45.0	43.5	42.0	39.5	40.0	42.0	- -	- -	- -	- -	45.5	39.0	37.0	34.5	33.5
Hourly means.	42.03	40.92	40.57	40.00	39.58	41.55	45.00	48.81	51.72	54.29	51.89	50.21	46.18	43.90	43.28	42.93

Mean time.	0h. 5m.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.	Noon.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.
1861.	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°
December 1	30.0	29.0	31.0	33.0	35.0	38.0	44.0	44.0	45.0	45.5	45.0	45.0	44.5	46.0	45.0	45.0
2	45.0	43.0	41.5	39.5	37.0	35.0	36.0	35.5	38.0	- -	- -	36.0	33.0	33.0	33.0	32.0
3	31.0	27.0	26.0	25.0	24.0	24.5	27.5	30.0	34.0	- -	35.5	33.0	30.0	28.0	27.0	26.0
4	25.0	22.0	21.5	21.0	20.0	22.0	25.5	31.0	33.5	36.0	36.0	35.0	30.5	29.0	28.5	28.0
5	29.0	28.0	28.5	27.0	27.0	28.0	33.0	36.5	41.5	47.0	48.5	47.0	40.0	35.0	33.0	33.0
6	31.5	30.5	30.0	30.5	31.0	33.0	35.0	- -	49.0	54.0	55.0	52.0	43.0	39.5	37.0	36.0
7	33.0	32.5	32.0	32.0	32.0	34.0	35.0	- -	47.0	47.5	50.5	50.0	42.5	39.0	39.0	39.0
8	33.0	32.5	33.0	33.0	33.0	36.0	38.0	43.0	49.5	59.0	61.0	60.5	56.0	53.0	49.5	47.5
9	45.0	44.0	42.0	40.0	39.0	39.5	44.0	49.0	62.5	66.0	66.5	64.5	55.0	50.5	49.0	48.5
10	43.0	43.0	44.0	45.0	45.5	47.0	50.0	55.0	57.5	- -	65.0	63.0	56.0	55.5	56.0	56.0
11	52.5	51.0	51.0	51.0	51.5	53.0	57.0	55.0	53.5	- -	- -	46.0	39.5	35.0	35.0	33.0
12	31.0	29.0	28.5	27.5	26.0	27.0	29.0	31.0	36.0	40.5	37.0	38.0	32.0	- -	- -	26.5
13	25.0	24.0	23.0	22.0	21.0	22.5	26.0	28.0	38.5	- -	43.0	41.0	35.0	31.0	31.0	30.0
14	28.0	28.0	27.5	27.0	26.0	27.5	- -	- -	43.0	49.5	45.5	47.0	39.0	38.0	38.5	- -
15	33.0	39.5	45.0	48.0	46.0	41.0	42.0	44.0	46.0	47.0	47.0	46.5	35.0	31.0	29.5	29.0
16	27.0	26.5	26.5	26.0	27.0	29.5	33.5	38.0	47.0	- -	- -	50.0	45.0	39.5	40.5	42.0
17	42.0	44.0	46.0	47.0	47.0	41.0	44.0	- -	- -	- -	- -	53.0	43.0	40.0	39.5	38.5
18	38.0	35.5	35.0	33.0	32.0	35.0	37.5	44.0	52.5	56.5	56.0	54.4	45.0	38.5	36.0	34.0
19	33.0	32.0	31.5	31.0	31.0	31.0	35.0	39.0	50.0	55.0	55.0	51.0	43.0	42.0	39.5	39.0
20	36.0	34.5	35.5	35.5	35.5	38.5	45.5	48.0	58.0	55.0	53.5	51.0	45.0	41.0	40.0	39.0
21	36.0	33.5	29.5	29.0	27.0	27.5	29.0	30.5	33.0	35.0	34.5	33.0	28.0	25.5	26.0	24.5
22	27.0	29.0	29.0	27.0	30.0	31.0	33.5	34.0	41.0	39.0	39.0	37.0	35.0	34.0	34.0	33.0
23	39.0	37.0	36.0	35.0	34.0	34.5	35.0	35.0	38.0	37.0	- -	37.5	33.0	35.0	35.0	34.0
24	36.0	35.5	35.0	35.0	33.0	32.0	33.0	- -	35.0	36.5	35.0	35.0	33.0	30.5	30.0	30.0
25	32.0	32.0	32.0	31.0	28.0	28.5	31.0	32.5	35.0	38.0	39.0	42.0	31.5	30.0	30.0	29.0
26	27.0	26.0	27.5	29.0	30.0	31.0	32.5	35.0	- -	- -	42.0	39.0	37.0	35.5	35.0	35.0
27	37.0	39.0	40.5	42.0	43.0	40.0	39.0	39.0	37.0	37.0	- -	36.0	30.0	30.0	29.0	29.0
28	27.5	27.5	27.5	27.5	27.0	27.0	28.0	30.0	33.0	37.0	37.0	33.5	30.0	27.0	26.0	27.5
29	26.0	25.0	26.0	26.5	27.0	28.0	31.5	35.0	36.0	42.0	39.0	38.0	32.5	28.0	28.0	27.0
30	27.0	29.5	31.0	31.5	36.0	37.0	37.0	39.0	- -	- -	43.5	43.0	38.0	32.0	31.0	30.5
31	32.0	30.0	28.0	26.0	24.0	26.5	32.5	33.0	42.0	50.0	47.5	- -	38.0	36.0	36.5	36.5
Hourly means.	33.56	32.89	32.94	32.69	32.44	33.10	35.98	38.23	43.29	45.91	46.26	44.60	38.65	36.27	35.57	34.60

Hosted by Google

Mean time.	0h. 5m.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.	Noon.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.
1861.	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°
January 1	14.0	- -	- -	- -	- -	- -	17.0	22.0	31.0	34.0	34.0	32.5	- -	24.0	23.5	22.0
2	19.0	17.0	17.0	17.0	17.0	18.0	19.0	25.0	32.0	34.0	36.0	33.5	35.0	33.0	33.0	33.0
3	33.0	33.0	33.0	33.0	33.0	34.0	34.5	- -	37.0	37.0	- -	37.0	34.0	32.5	31.0	30.0
4	30.0	28.0	28.0	28.0	29.0	30.0	30.0	30.0	34.0	38.0	37.0	36.0	33.0	32.0	32.0	31.0
5	26.0	25.0	24.0	23.5	23.0	24.5	26.0	31.0	34.0	35.0	36.0	35.0	31.0	27.0	26.0	27.0
6	26.0	25.0	24.0	24.0	23.0	23.0	29.5	31.0	34.0	38.0	38.0	38.0	32.0	32.5	32.0	32.0
7	33.0	34.0	35.0	35.0	35.0	36.0	36.0	- -	- -	43.0	43.0	40.0	39.0	39.0	39.0	38.0
8	40.0	39.0	38.0	38.0	37.0	37.0	39.0	40.0	42.0	43.0	43.0	40.0	37.0	34.0	33.0	33.0
9	35.0	34.0	34.0	34.5	35.0	35.0	33.0	35.0	35.0	- -	35.0	35.0	34.0	34.0	34.0	32.5
10	31.5	31.0	30.5	30.0	30.0	30.0	31.0	33.0	38.0	- -	38.0	36.0	31.0	29.0	28.0	27.0
11	25.0	24.0	22.0	20.0	20.0	21.0	23.0	25.0	- -	30.0	29.0	27.0	28.0	28.5	28.5	29.0
12	30.0	31.0	30.0	30.0	30.0	31.0	32.0	32.0	34.0	34.0	34.0	34.0	27.0	24.0	21.0	21.0
13	16.5							12.0	16.0	21.0	22.5	22.5	18.0		16.0	16.0
14	17.0	20.0	21.0	21.0	22.0	23.0	24.0	27.0	31.5	- -	- -	28.0	29.0	29.0	29.0	29.0
15	28.5	27.0	27.0	28.0	29.0	30.0	31.0	33.0	34.5	- -	- -	33.0	33.0	32.5	32.0	32.0
16	33.0	33.0	34.0	34.0	34.0	34.5	34.5	35.0	40.0	- -	38.0	38.0	35.0	35.0	35.0	36.0
17	38.0	36.0	35.0	35.0	34.0	37.0	37.0	37.0	41.0	42.0	40.0	40.0	35.0	31.0	30.0	29.0
18	27.0	27.0	27.0	28.0	28.0	30.0	- -	31.0	33.0	34.0	33.0	33.0	34.0	34.0	33.5	34.0
19	36.0	35.0	33.0	31.0	31.0	30.5	- -	33.0	36.0	40.0	40.0	38.0	35.0	34.0	34.0	35.0
20	37.0	36.0	35.0	34.0	32.5	31.0	33.0	- -	35.0	36.0	37.0	36.0	33.0	32.0	31.0	29.0
21	25.0	24.0	23.0	23.0	24.0	26.0	28.0	- -	35.0	- -	36.0	34.0	32.0	29.0	27.5	27.0
22	23.0	23.0	23.0	22.0	21.0	22.0	25.0	- -	31.0	32.0	31.0	31.0	29.0	24.0	24.0	24.0
23	21.0	20.0	20.0	19.5	19.0	20.0	23.0	25.0	29.0	- -	30.5	28.0	28.0	29.0	- -	29.0
24	29.0	29.0	28.0	28.0	29.0	32.5	33.0	35.0	37.0	39.0	39.0	40.0	37.0	34.0	34.0	33.0
25	32.5	31.5	31.0	31.0	31.0	32.0	33.0	34.0	37.0	- -	38.0	36.0	34.0	34.0	33.5	33.0
26	33.0	32.5	32.0	32.0	32.0	31.5	30.0	28.0	28.0	28.0	28.0	28.0	24.0	25.0	24.0	24.0
27	24.0	22.0	20.0	18.5	17.5	15.5	20.0	25.0	31.0	34.0	35.0	34.0	27.0	24.0	24.0	24.0
28	23.0	23.0	23.0	23.0	22.0	28.0	32.5	32.0	32.0	33.0	34.0	32.0	28.0	23.0	22.0	22.0
29	24.0	25.0	26.0	27.0	27.0	32.5	33.0	35.0	43.0	42.0	43.0	42.0	38.0	38.0	37.0	38.0
30	40.0	40.0	40.0	39.0	37.0	32.0	33.0	27.5	27.0	27.0	28.0	28.0	23.0	22.0	21.0	20.5
31	19.0	18.5	- -	- -	- -	17.0	21.0	22.0	27.0	- -	32.0	32.0	26.5	22.0	20.5	19.0
Hourly means.	28.03	28.40	28.34	28.11	27.93	28.43	29.32	29.83	33.62	35.18	35.29	34.11	31.35	30.03	28.97	28.68

Mean time.	0h. 5m.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.	Noon	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.
1861.	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°
February 1	- -	- -	- -	- -	- -	- -	27.0	29.0	31.5	36.0	35.0	35.0	35.0	35.0	35.0	35.0
2	35.0	36.5	38.0	39.0	40.0	44.0	45.0	46.0	46.0	- -	47.0	46.0	- -	46.0	46.0	45.0
3	43.0	42.0	41.0	40.0	40.0	38.0	38.0	36.0	36.0	36.0	36.0	36.0	34.0	34.0	34.0	33.0
4	33.5	31.0	30.0	29.0	28.0	28.0	29.0	31.0	38.0	37.5	37.0	38.0	31.0	29.0	28.0	28.0
5	26.0	24.0	24.0	24.0	24.0	29.0	32.0	33.0	38.0	36.0	37.0	37.0	33.0	31.0	30.0	30.0
6	30.0	30.0	29.5	29.0	29.0	30.0	32.0	- -	38.0	- -	- -	40.0	36.0	36.0	35.0	36.0
7	33.0	32.0	32.0	32.0	33.0	35.5	36.0	40.0	47.0	38.5	35.0	30.5	23.0	16.0	14.5	10.0
8	5.0	4.0	3.0	2.5	2.0				14.0	14.5	16.0	16.0	15.0	14.0	14.0	14.0
9	14.0	14.0	14.0	15.0	16.0	18.5	25.0	28.0	32.0	35.0	37.0	38.0	33.0	33.0	34.0	34.0
10	35.0	34.0	34.0	34.0	34.0	34.0	35.0	34.0	36.5	52.0	53.0	54.0	48.0	46.0	45.0	45.0
11	45.0	46.0	46.0	46.0	46.0	47.0	46.0	50.0	52.0	57.0	- -	52.0	52.5	53.0	52.0	52.0
12	52.0	52.0	51.0	50.0	49.0	49.0	51.0	51.0	52.0	52.0	51.0	52.0	50.0	43.0	40.0	40.0
13	41.0	38.0	36.0	32.0	32.0	34.0	- -	40.0	50.0	51.0	51.0	52.0	48.0	40.0	37.5	36.0
14	33.0	33.0	33.0	33.0	34.0	35.0	38.0	42.0	47.0	48.0	49.0	48.0	46.0	44.0	42.0	43.0
15	43.0	42.0	42.0	43.0	43.0	42.0	43.0	46.0	46.0	46.0	48.0	47.0	39.0	37.5	37.0	37.0
16	36.0	35.0	34.0	34.0	31.0	33.0	37.0	- -	49.0	46.0	47.0	46.0	45.0	42.5	40.0	40.0
17	40.0	36.0	36.0	35.0	33.0	33.0	34.0	37.0	37.0	34.0	34.0	34.0	34.0	32.5	32.0	30.5
18	30.0	29.0	28.0	28.0	27.5	29.0	31.5	32.0	32.5	32.0	32.0	33.0	31.0	30.0	30.0	29.0
19	27.0	26.0	25.0	25.0	25.0	28.0	31.0	33.0	34.0	34.0	35.0	34.0	34.0	34.0	35.0	35.0
20	34.0	34.0	34.0	34.0	34.0	35.0	36.0	37.0	38.0	38.0	38.0	38.0	39.0	38.0	38.0	38.0
21	35.0	34.0	33.0	32.0	32.0	31.0	31.0	33.0	33.5	- -	36.0	33.0	32.0	32.0	32.0	31.0
22	29.0	26.0	25.0	25.0	25.0	28.0	32.0	35.0	38.0	42.0	- -	44.0	40.0	38.0	40.0	38.0
23	38.0	37.0	37.0	37.0	37.0	41.0	46.0	47.0	- -	58.0	56.0	55.5	54.0	54.0	54.0	54.0
24	54.0	50.0	48.0	46.0	44.0	40.0	38.0	38.0	36.0	34.0	32.0	33.0	30.0	28.0	26.0	26.0
25	25.0	25.0	24.0	22.5	21.0	24.0	28.0	30.0	34.0	37.0	38.0	38.0	36.0	32.0	32.0	32.0
26	31.5	32.0	33.0	33.0	33.0	34.5	37.0	- -	46.0	- -	51.0	50.0	48.0	46.0	39.0	37.0
27	38.0	37.5	37.0	36.0	32.0	35.0	38.0	42.0	50.0	54.0	- -	55.0	54.0	45.0	42.0	40.0
28	40.0	38.0	36.0	35.0	34.5	39.0	42.0	50.0	56.0	- -	58.0	60.0	56.0	52.0	52.0	50.0
Hourly means.	33.93	33.26	32.72	32.26	31.81	34.40	36.10	38.33	40.30	41.24	41.21	41.96	39.13	37.20	36.29	35.66

Hosted by Google

Mean time.	0h. 5m.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.	Noon.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.
1861.	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°
March 1	48.0	46.0	45.0	45.0	46.0	48.5	50.0	58.0	65.0	66.0	66.0	65.0	61.0	61.0	60.0	60.0
2	52.0	51.0	50.0	48.0	48.0	53.0	55.0	- -	66.0	72.0	69.0	72.0	66.0	60.0	- -	58.0
3	54.0	50.0	48.0	46.0	47.0	51.0	53.0	56.0	63.0	64.0	66.0	65.0	65.0	61.0	60.0	60.0
4	59.0	56.0	55.0	54.0	54.0	49.0	46.0	48.0	- -	- -	- -	- -	48.0	46.0	45.0	44.0
5	40.0	40.0	40.0	35.0	33.5	34.0	34.0	32.5	34.5	35.0	34.0	32.0	27.0	26.0	25.0	25.0
6	24.0	23.0	23.0	23.0	22.0	26.0	29.0	32.0	33.0	40.0	- -	40.0	38.0	38.0	37.0	36.0
7	38.0	35.0	32.0	29.0	26.0	25.0	25.0	26.0	30.0	32.0	33.0	33.0	28.0	25.0	26.0	26.0
8	24.0	22.0	23.0	24.0	26.0	30.0	33.0	- -	40.0	- -	44.0	42.0	40.0	42.0	43.0	42.0
9	47.0	48.0	49.0	49.0	49.0	48.0	49.0	44.5	42.5	40.0	40.0	43.0	38.0	37.0	36.0	35.0
10	34.0	32.5	32.5	32.0	32.0	32.0	34.0	34.0	38.0	37.0	36.0	38.0	34.0	32.5	31.5	30.0
11	30.0	29.0	28.0	27.0	27.0	28.0	29.5	31.0	- -	36.0	35.0	36.0	34.0	30.0	30.0	30.0
12	30.0	31.0	32.0	32.0	34.0	36.0	40.0	41.0	- -	51.0	51.0	50.0	49.0	48.0	48.0	48.0
13	49.0	48.0	48.0	47.0	47.0	48.0	50.0	51.0	59.0	62.0	- -	61.0	51.0	48.0	48.0	47.0
14	42.0	40.0	38.0	37.0	36.0	35.0	35.0	35.0	33.5	- -	32.0	32.0	30.0	29.5	29.0	28.0
15	28.0	27.0	28.0	28.0	29.0	29.5	31.0	32.5	34.0	33.0	33.0	33.0	33.0	34.0	34.0	34.0
16	31.0	30.0	30.0	30.0	32.0	33.0	36.0	40.0	46.0	52.0	49.0	49.0	50.0	50.0	50.0	48.0
17	46.0	46.0	44.5	43.0	40.0	45.0	46.0	46.0	42.0	39.0	38.0	38.0	35.0	36.0	35.0	- -
18	30.0	28.0	25.0	21.0	20.0	20.5	22.0	22.0	24.0	- -	23.0	21.0	21.0	20.0	20.0	20.0
19	19.0	19.5	20.0	20.0	19.0	20.5	22.0	22.0	26.0	32.0	33.0	34.0	32.0	27.0	26.0	24.0
20	24.0	22.0	22.0	22.0	22.0	29.0	31.5	34.0	40.0	38.0	40.0	38.0	36.0	35.0	36.0	36.0
21	35.0	34.0	34.0	31.0	29.0	29.0	30.0	31.0	32.0	32.0	32.0	32.0	31.0	29.0	30.0	30.0
22	32.0	30.0	30.0	30.0	30.0	31.5	33.0	- -	36.0	37.0	40.0	42.0	40.0	35.0	32.0	31.0
23	29.0	27.5	27.0	26.0	26.0	32.0	36.0	38.0	40.0	52.0	53.0	52.0	50.0	48.0	46.0	47.0
24	44.0	42.0	40.0	40.0	40.0	40.0	38.0	40.0	43.0	48.0	47.0	46.0	44.0	40.0	39.0	37.0
25	32.0	31.0	31.0	30.0	29.0	35.0	38.0	40.0	46.0	51.0	52.0	48.0	45.0	43.0	42.0	42.0
26	42.0	43.0	44.0	46.0	46.0	55.0	54.0	54.0	58.0	60.0	62.0	63.0	60.0	58.0	59.0	60.0
27	60.0	- -	- -	- -	- -	- -	55.0	57.0	55.0	60.0	56.0	54.0	51.0	46.0	46.0	44.0
28	44.0	39.0	38.0	38.0	38.0	40.0	44.0	44.0	50.0	50.0	52.0	50.0	48.0	44.0	40.0	38.0
29	37.0	37.0	37.0	37.0	37.0	42.0	46.0	49.0	54.0	58.0	- -	58.0	52.0	51.0	51.0	52.0
30	52.0	52.0	54.0	55.0	56.0	57.5	60.0	58.0	53.0	55.0	52.0	52.0	46.0	44.0	42.0	38.0
31	40.0	39.0	37.0	36.0	37.0	36.0	38.0	40.0	46.0	48.0	52.0	51.0	42.0	41.0	41.0	41.0
Hourly means.	38.58	36.62	36.17	35.37	35.25	37.30	39.45	40.59	43.91	47.41	45.19	45.67	42.74	40.81	39.57	39.70

Mean time.	0h. 5m.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h 5m.	Noon.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m	8h. 5m.	9h. 5m.	10h. 5m.
1861.	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°
April 1	38.0	36.0	34.0	33.0	33.0	36.0	39.0	39.0	39.0	39.0	40.0	39.0	40.0	40.0	39.0	41.0
2	41.0	41.0	40.0	40.0	40.0	- -	42.0	44.0	45.0	- -	46.0	46.0	40.0	39.0	39.0	37.0
3	35.0	34.0	31.5	31.0	32.0	36.0	38.0	- -	44.0	- -	- -	51.0	46.0	44.0	- -	42.0
4	38.0	38.0	38.0	38.0	37.0	38.0	40.0	- -	46.0	48.0	45.0	45.0	44.0	41.0	41.0	38.0
5	33.0	32.0	31.0	31.0	31.0	37.0	40.0	- -	50.0	- -	- -	52.0	48.0	46.0	44.0	43.0
6	43.0	43.0	43.0	43.0	43.0	44.0	- -	46.0	51.0	- -	- -	53.0	46.0	44.0	41.0	41.0
7	40.0	39.0	38.0	38.0	38.0	39.0	40.0	42.0	41.0	41.0	41.0	42.0	42.0	41.0	40.0	40.0
8	40.0	40.0	40.0	40.0	40.0	41.5	43.0	- -	46.0	47.0	46.0	45.0	43.0	41.0	41.0	41.0
9	40.0	41.0	41.0	42.0	42.0	43.0	43.0	- -	46.0	46.0	46.0	45.0	43.0	41.0	40.0	40.0
10	39.0	38.0	38.0	37.0	37.0	35.5	36.0	40.0	45.5	47.0	- -	49.0	48.0	46.0	44.0	42.0
11	38.0	36.0	34.5	33.0	33.0	38.0	41.0	44.0	- -	- -	- -	55.0	58.0	46.0	43.5	42.0
12	40.0	39.0	40.0	40.0	42.0	46.0	47.0	52.0	- -	- -	54.0	54.0	55.0	53.0	53.0	53.0
13	54.0	55.0	55.0	55.0	56.0	55.0	57.0	60.0	- -	- -	62.0	62.0	55.0	48.0	48.0	48.0
14	50.0	48.0	- -	47.0	47.0	50.0	52.0	54.0	55.5	56.0	52.0	54.0	58.0	51.0	51.0	50.0
15	43.0	41.0	40.0	40.0	40.0	44.0	46.0	48.0	47.0	- -	- -	48.0	46.0	44.0	43.0	43.0
16	42.0	42.0	41.5	41.0	41.0	42.5	43.0	44.0	46.0	44.0	44.0	45.0	44.0	42.0	41.0	41.0
17	40.0	39.0	37.5	36.0	37.0	38.0	40.0	38.0	38.0	- -	- -	40.0	40.0	38.0	37.0	36.0
18	34.5	33.0	34.0	35.0	41.0	44.0	42.0	- -	45.0	54.0	- -	55.0	56.0	- -	50.0	50.0
19	50.0	46.0	42.0	40.0	41.0	48.0	46.0	44.0	41.0	- -	43.0	44.0	40.0	39.0	38.0	38.0
20	38.0	36.0	34.0	33.0	33.0	38.0	40.0	- -	45.0	46.0	- -	50.0	- -	44.0	43.0	42.0
21	40.0	39.5	39.0	38.0	38.0	42.0	44.0	47.0	49.0	58.0	59.0	59.0	59.0	54.0	53.0	53.0
22	53.0	53.0	54.0	53.0	53.0	55.0	58.0	62.0	69.0	- -	70.0	70.0	66.0	63.0	63.0	62.0
23	58.0	58.0	58.0	58.0	56.0	60.0	63.0	64.0	76.0	- -	74.0	69.0	66.0	65.0	64.0	62.0
24	63.0	63.0	62.0	60.0	58.0	63.0	64.0	- -	72.0	- -	66.0	65.0	65.0	59.0	55.0	54.0
25	52.5	50.0	48.0	46.0	48.0	51.0	55.0	56.0	57.0	60.0	- -	60.0	60.0	54.0	54.0	53.0
26	48.0	46.0	45.0	44.0	44.0	43.0	54.0	57.0	62.0	65.0	66.0	66.0	60.0	60.0	57.0	57.0
27	52.0	51.0	50.0	50.0	54.0	59.0	64.0	62.0	- -	- -	73.0	71.0	68.0	67.0	64.0	63.0
28	64.0	63.0	62.0	62.0	60.0	69.0	66.0	57.0	58.0	54.0	53.0	52.0	53.0	51.0	48.0	48.0
29	45.0	43.0	43.0	43.0	44.0	52.0	54.0	56.0	63.0	- -	66.0	65.0	64.0	58.0	56.0	56.0
30	54.0	53.0	52.0	50.0	53.0	60.0	65.0	- -	55.0	- -	-	54.0	54.0	51.0	50.0	49.0
Hourly means.	44.87	43.88	42.97	42.57	43.07	46.47	48.34	50.29	51.23	50.36	55.05	53.50	51.97	48.62	47.60	46.83

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WET THERMOMETER.

Mean time.	0h. 5m.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.	Noon.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.
1861.	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°
May 1	46.0	46.0	45.0	46.0	46.0	52.0	50.0	50.0	- -	- -	- -	47.5	- -	- -	- -	37.0
2	36.0	37.0	33.0	33.0	34.0	36.0	38.0	40.0	46.0	- -	- -	48.0	- -	39.0	39.0	37.5
3	36.0	34.0	33.0	33.0	34.0	45.0	47.0	48.0	- -	- -	43.0	44.0	42.0	42.0	43.0	42.0
4	40.0	40.0	40.0	40.0	40.0	40.0	39.0	39.0	40.0	45.0	45.0	50.0	48.0	41.0	41.0	40.0
5	39.0	38.0	36.0	34.0	35.0	40.0	46.0	48.0	57.0	57.0	58.0	53.0	48.0	46.0	46.0	45.0
6	45.0	45.0	44.0	46.0	47.0	48.0	48.0	49.0	- -	- -	- -	56.0	60.0	56.0	54.0	53.0
7	50.0	47.0	45.0	44.0	46.0	50.0	64.0	- -	60.0	62.0	- -	62.0	60.0	56.0	55.0	54.0
8	53.0	50.0	50.0	50.0	49.0	55.0	- -	- -	57.0	56.0	- -	56.0	52.0	50.0	49.0	49.0
9	47.0	44.0	42.0	40.0	42.0	50.0	51.0	- -	- -	- -	- -	58.0	60.0	52.0	51.0	49.0
10	42.0	42.0	42.0	42.0	46.0	50.0	56.0	- -	- -	- -	- -	54.0	56.0	52.0	52.0	51.0
11	48.0	48.0	48.0	48.0	49.0	51.0	- -	- -	62.0	- -	- -	74.0	66.0	60.0	60.0	59.0
12	57.0	52.0	51.0	49.0	51.0	56.0	60.0	61.0	63.0	65.5	68.0	66.0	64.0	63.0	61.0	61.0
13	58.0	57.0	56.0	56.0	56.0	64.0	64.0	68.0	70.0	- -	70.0	71.0	71.0	67.0	66.0	65.0
14	64.0	63.0	63.0	63.0	66.0	67.0	- -	- -	70.0	- -	- -	76.0	68.0	64.0	62.0	60.0
15	56.0	54.0	54.0	54.0	55.0	56.0	58.0	- -	65.0	- -	66.0	64.0	61.0	58.0	56.0	55.0
16	50.0	50.0	50.0	49.0	50.0	56.0	53.0	56.0	- -	- -	- -	64.0	60.0	56.0	54.0	52.0
17	49.0	47.0	46.0	46.0	46.0	46.0	- -	- -	54.0	- -	- -	60.0	56.0	52.0	50.0	48.0
18	45.0	44.0	44.0	42.0	42.0	48.0	50.0	- -	- -	- -	65.0	59.0	58.0	54.0	51.0	49.0
19	48.0	45.0	45.0	44.0	46.0	48.0	- -	60.0	61.0	56.0	60.0	55.0	54.0	52.0	51.0	50.0
20	50.0	49.0	49.0	50.0	51.0	54.0	53.0	53.0	53.5	- -	- -	53.0	53.0	50.0	50.0	50.0
21	48.5	48.0	47.0	47.0	48.0	51.0	- -	52.0	57.0	59.0	59.0	61.0	57.0	54.0	54.0	53.5
22	64.0	64.0	64.0	64.0	64.0	63.0	66.0	67.0	66.0	66.0	- -	68.0	68.0	67.0	64.0	64.0
23	48.0	46.0	45.0	44.0	46.0	52.0	58.0	58.0	63.0	- -	- -	74.5	60.0	54.0	54.0	54.0
24	50.0	50.0	50.0	48.0	49.0	55.0	- -	- .	62.0	65.5	66.0	65.0	- -	62.5	55.0	55.0
25	56.0	54.0	53.0	53.0	55.0	60.0	55.0	- -	65.0	- -	- -	72.0	70.0	66.0	66.0	65.0
26	62.0	59.0	59.0	59.5	61.0	67.0	66.0	69.0	73.0	76.0	76.0	76.0	70.0	70.0	70.0	67.0
27	64.0	64.0	64.0	64.0	65.0	69.0	73.0	- -	72.0	- -	64.0	61.0	60.0	59.0	58.0	54.0
28	54.0	54.0	53.0	52.0	51.0	50.0	55.0	- -	60.0	60.0	- -	60.0	60.0	58.0	54.0	52.0
29	53.0	54.0	54.0	55.0	56.0	58.0	58.0	- -	60.0	63.0	61.0	60.0	- -	54.0	54.0	50.0
30	48.0	44.0	43.0	46.0	46.0	54.0	55.0	55.0	60.0	- -	- -	64.0	60.0	56.0	56.0	55.0
31	53.0	50.0	48.5	47.0	50.0	56.0	- -	63.0	65.0	69.0	68.0	68.0	67.0	62.0	62.0	60.0
Hourly means.	50.31	49.00	48.27	48.02	49.10	53.13	54.91	55.06	60.90	61.54	62.07	61.29	59.59	55.75	54.60	52.77

Mean time.	0h. 5m.	2h. 5m.	3h. 5m.	4h. 5m	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.	Noon.	2h. 5m.	3h. 5m.	4h. 5m	6h 5m.	8h. 5m.	9h. 5m.	10h. 5m
1861.	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°
June 1	56.0	56.0	55.0	55.0	58.0	62.0	66.0	67.0	70.0	74.0	73.0	76.0	76.0	69.0	67.0	61.0
2	64.0	62.0	60.0	60.0	62.0	64.0	66.0	69.0	76.0	77.0	78.0	78.0	76.0	62.0	72.0	70.0
3	68.0	68.0	68.0	68.0	69.0	69.0	72.0	- -	- -	- -	77.0	77.0	- -	74.0	73.0	72.0
4	70.0	69.0	68.0	68.0	69.0	70.0	71.0	- -	67.0	- -	66.0	64.0	64.0	63.0	63.0	62.0
5	63.0	61.0	62.0	61.0	62.0	62.5	61.5	62.0	- -	62.0	60.0	60.0	59.0	54.0	53.0	53.0
6	51.0	51.0	51.0	51.0	52.0	52.0	54.0	63.0	64.0	- -	- -	64.0	62.0	60.0	59.0	59.0
7	58.0	56.5	56.0	57.0	60.0	60.0	62.0	- -	66.0	68.0	66.0	66.0	65.0	62.0	62.0	60.0
8	60.0	59.0	58.0	58.0	60.0	65.0	65.0	- -	70.0	68.0	65.0	68.0	70.0	60.0	60.0	60.0
9	58.0	57.0	56.0	56.0	56.0	60.0	62.0	65.0	68.0	72.0	70.0	70.0	68.0	61.0	61.0	61.0
10	61.0	60.0	59.0	53.0	60.0	66.0	63.0	66.0	72.0	- -	- -	74.0	75.0	70.0	70.0	70.0
11	68.0	67.0	66.0	66.0	66.0	68.0	- -	72.0	76.0	- -	75.0	76.0	74.0	70.0	70.0	70.0
12	70.0	68.0	66.0	64.0	66.0	70.0	72.0	76.0	78.0	79.0	- -	80.0	- -	72.0	72.0	70.0
13	68.0	- -	62.0	60.0	60.0	62.0	66.0	67.0	70.0	71.0	70.0	70.0	68.0	63.0	63.0	69.0
14	- -	61.0	56.0	54.0	56.0	62.0	64.0	- -	70.0	72.0	72.0	72.0	72.0	68.0	68.0	69.0
15	64.0	63.0	63.0	63.0	68.0	72.0	74.0	- -	82.0	85.0	85.0	80.0	74.0	76.0	76.0	76.0
16	76.0	74.0	70.0	68.0	70.0	72.0	72.0	79.0	79.0	74.0	72.0	72.0	67.0	65.0	65.0	65.0
17	61.0	61.0	61.0	60.0	60.0	58.0	64.0	65.0	65.0	- -	- -	66.0	64.0	60.0	60.0	60.0
18	60.0	59.0	58.0	58.0	60.0	60.0	64.0	67.0	68.0	69.0	73.0	72.0	69.0	64.0	62.0	61.0
19	60.0	60.0	60.0	59.5	59.0	61.0	- -	68.0	73.0	- -	75.0	73.0	72.0	64.0	- -	65.0
20	68.0	68.0	68.0	68.0	68.0	69.0	72.0	- -	76.0	76.0	- -	76.0	76.0	74.0	72.0	72.0
21	68.0	66.0	66.0	66.0	68.0	72.0	74.0	75.0	79.0	83.0	. -	83.0	80.0	76.0	- -	75.0
22	76.0	74.0	72.0	72.0	69.0	72.0	- -	72.0	75.0	76.0	76.0	76.0	74.0	70.0	70.0	68.0
23	64.0	63.0	63.0	62.0	64.0	72.0	76.0	76.0	80.0	84.0	82.0	80.0	76.0	70.0	- -	72.0
24	70.0	68.0	66.0	64.0	64.0	65.0	67.0	67.0	70.0	72.0	72.0	72.0	72.0	65.0	64.0	62.0
25	60.0	60.0	58.0	58.0	59.0	71.0	72.0	- -	75.0	- -	- -	76.0	76.0	70.0	70.0	69.0
26	65.0	67.0	67.0	67.0	67.0	70.0	73.0	- -	76.0	79.0	80.0	82.0	74.0	72.0	72.0	71.0
27	70.0	69.0	69.0	69.0	69.0	68.0	70.0	- -	74.0	- -	- -	75.0	75.0	70.0	68.0	68.0
28	67.0	64.0	64.0	64.0	65.0	70.0	70.0	73.0	76.0	- -	76.0	76.0	72.0	74.0	73.0	72.0
29	69.0	67.0	67.0	67.0	66.0	66.0	70.0	70.0	72.0	70.0	70.0	71.0	71.0	71.0	68.0	64.0
30	62.0	61.0	60.0	60.0	62.0	70.0	70.0	72.0	74.0	65.0	65.0	67.0	66.0	60.0	60.0	60.0
Hourly means.	64.66	63.43	62.50	62.05	63.13	66.02	67.87	69.55	72.89	73.80	72.64	73.07	70.96	67.30	66.41	65.90

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Mean time.	0h. 5m.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m	8h. 5m.	9h. 5m.	10h. 5m	Noon.	2h. 5m	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.
1861.	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°
July 1	62.0	62.0	63.0	63.0	65.0	67.0	70.0	68.0	74.0	75.0	- -	76.0	69.0	60.0	60.0	60.0
2	60.0	58.0	57.0	56.0	56.0	58.0	56.0	58.0	59.6	60.0	- -	62.0	- -	60.0	- -	56.0
3	- -	- -	- -	- -	- -	- -	60.0	65.0	66.0	- -	70.0	70.0	70.0	70.0	64.0	63.0
4	62.0	57.0	56 0	56.0	58.0	65.0	66.0	70.0	74.0	75.0	74.0	75.0	- -	- -	64.0	64.0
5	60.0	60.0	59.0	59.0	60.0	66.0	68.0	- -	74.0	75.0	75.0	75.0	70.0	69.0	69.0	69.0
6	69.0	67.0	64.0	64.0	68.0	69.0	- -	74.0	76.0	- -	72.0	74.0	75.0	71.0	70.0	70.0
7	70.0	69.0	68.0	69.0	70.0	72.0	72.0	74.0	78.0	80.0	79.0	80.0	80.0	74.0	74.0	72 0
8	70.0	70.0	68.0	68.0	70.0	70.0	- -	- -	80.0	80.0	82.0	84.0	77.0	75.0	74.0	73.0
9	69.0	69.0	69.0	69.0	70.0	70.0	75.5	- -	82.0	- -	85.0	84.0	70.0	70.0	69.0	69.0
10	68.0	66.0	65.0	65.0	66.0	70.0	70.0	- -	78.0	- -	80.0	80.0	68.0	62.0	64.0	64.0
11	63.0	62.0	63.0	63.0	62.0	66.0	66.0	- -	70.0	- -	74.0	74.0	63.0	61.0	62.0	61.0
12	60.0	59.0	57.0	56.0	58.0	60.0	66 0	- -	66.0	66.0	69.0	70.0	68.0	64.0	64.0	63.0
13	58.0	60.0	61.0	61.0	62.0	61.5	62.0	- -	68.0	68.0	67.0	67.0	64.0	62.0	61.0	60.0
14	58.0	56.0	56.0	56.0	58.0	60.0	62.0	64.0	66.0	67.0	65.0	65.0	- -	63.0	62.0	60.0
15	58.0	57.0	56.0	56.0	58.0	60.0	64.0	- -	71.0	- -	72.0	70.0	73.0	68.0	61.0	64.0
16	64.0	63.0	62.0	62.0	62.0	66.0	68.0	68.0	69.0	- -	70.0	74.0	71.0	66.0	66.0	66 0
17	64.0	62.0	62.0	62.0	62.0	68.0	70.0	71.0	76.0	- -	- -	76.0	73.0	70.0	68.0	66.0
18	67.0	64.0	64.0	64.0	66.0	70.0	74.0	75.0	76.0	- -	82.0	79.0	- -	72.0	72.0	70.0
19	70.0	69.5	69.0	69.0	69.0	72.0	71.0	- -	78.0	- -	- -	76.0	76.0	72.0	70.0	70.0
20	69.0	69.0	70.0	70.0	70.0	73.0	75.0	74.0	- -	78.0	76.0	76.0	76.0	70.0	68.0	66.0
21	66.0	64.0	63.0	64.0	66.0	60.0	66.0	- -	70.0	69.0	70.0	71.0	70.0	68.0	64.0	64.0
22	65.0	64.0	64.0	64.0	64.0	65.0	69.0	66.0	- -	- -	63.0	62.0	60.0	60.0	60.0	60.0
23	59.5	58.0	58.0	58.0	58.0	60.0	63.0	65.0	69.0	66.0	67.0	68.0	68.0	63.0	62.0	61.0
24	60.0	58.0	56.0	55.0	56.0	62.0	64.0	66.0	68.0	- -	- -	69.0	- -	66.0	64.0	64.0
25	60.0	58.0	57.0	57.0	57.0	64.0	66.0	68.0	70.0	- -	70.0	71.0	66.0	64.0	64.0	- -
26	62.0	61.0	60.0	59.0	59.0	64.0	68.0	- -	77.0	- -	76.0	75.0	72.0	70.0	70.0	68.0
27	- -	65.0	63.0	63.0	65.0	70.0	70.0	74.0	76.0	- -	75.0	74.0	68.0	65.0	64.0	64.0
28	65.0	64.0	61.0	60.0	60.0	68.0	68.0	68.0	74.0	- -	78.0	80.0	76.0	66.0	66.0	67.0
29	68.0	65.0	65.0	68.0	70.0	74.0	75.0	- -	80.0	82.0	- -	80.0	76.0	74.0	71.0	70.0
30	66.0	64.0	62.0	62.0	- -	70.0	69.0	70.0	74.0	- -	76.0	- -	76.0	74.0	72.0	71.0
31	70.0	70.0	69.0	69.0	68.0	72.0	76.0	76.0	80.0	- -	- -	82.0	78.0	76.0	76.0	76.0
Hourly means.	64.22	63.02	62.23	62.23	63.21	66.42	67.91	69.16	73.09	72.38	73.62	73.97	71.27	67.50	66.50	65.70

Mean time.	0h. 5m.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m	8h. 5m.	9h. 5m.	10h. 5m.	Noon.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.
1861.	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°
August 1	73.0	72.0	72.0	71.0	71.0	72.0	72.0	74.0	78.0	82.0	80.0	80.0	78.0	76.0	75.0	74.0
2	70.0	70.0	69.0	69.0	- -	72.0	76.0	78.0	- -	80.0	80.0	80.0	78.0	76.0	74.0	74.0
3	72.0	70.0	69.0	68.0	71.0	74.0	76.0	80.0	78.0	- -	- -	78.0	78.0	75.0	75.0	74.0
4	73.0	72.0	72.0	72.0	70.0	76.0	78.0	79.0	79.0	82.0	82.0	81.0	- -	76.0	76.0	76.0
5	74.0	72.0	71.0	70.0	70.0	76.0	76.0	- -	82.0	- -	84.0	84.0	76.0	74.0	74.0	74.0
6	73.0	73.0	72.5	72.0	72.0	74.0	76.0	76.0	79.0	81.0	82.0	80.0	78.0	74.0	73.0	72.0
7	70.0	70.0	70.0	70.0	70.0	80.0	76.0	- -	84.0	- -	- -	- -	78.0	76.0	76.0	76.0
8	75.0	75.0	75.0	75.0	75.0	76.0	78.0	- -	82.0	83.0	81.5	82.0	82.0	79.0	79.0	78.0
9	76.0	75.0	74.0	74.0	73.0	74.0	76.0	77.0	78.0	81.0	81.0	80.0	73.0	73.0	72.0	70.0
10	70.0	70.0	70.5	71.0	71.5	74.0	76.0	- -	78.0	80.0	82.0	82.0	78.0	78.0	78.0	78.0
11	76.5	76.0	75.0	74.0	74.0	76.0	76.0	82.0	82.0	84.0	83.0	82.0	76.0	72.0	72.0	70.0
12	72.0	71.0	70.0	71.0	72.0	73.0	73.0	74.0	- -	75.0	76.0	75.0	74.0	72.0	72.0	71.0
13	71.0	72.0	72.0	72.0	72.0	73.0	- -	- -	86.5	- -	- -	- -	65.0	60.0	59.0	56.0
14	56.0	56.0	56.0	55.0	56.0	56.0	58.0	- -	- -	- -	64.0	61.0	62.0	62.0	59.0	58.0
15	55.0	54.0	53.0	53.0	55.0	60.0	62.0	60.0	69.0	- -	- -	67.0	- -	60.0	60.0	60.0
16	59.0	57.0	57.0	56.0	59.0	62.0	63.0	- -	67.0	65.0	65.0	65.0	64.0	62.0	62.0	61.0
17	62.0	62.0	62.5	63.0	63.0	64.0	65.0	- -	67.0	70.0	70.0	68.0	68.0	68.0	67.0	67.0
18	66.0	66.0	66.0	67.0	67.0	69.0	70.0	73.0	73.0	75.0	75.0	75.0	73.0	71.0	70.0	70.0
19	70.0	70.0	70.0	70.0	70.0	72.0	72.0	74.0	75.0	73.0	73.0	73.0	73.0	70.0	70.0	71.0
20	71.0	70.0	68.0	65.0	66.0	68.0	69.0	70.0	74.0	72.0	72.0	71.0	70.0	62.0	62.0	62.0
21	61.0	59.0	57.0	55.0	57.0	62.0	66.0	- -	- -	71.0	68.0	67.0	- -	65.0	64.0	64.0
22	63.0	64.0	64.0	65.0	66.0	70.0	72.0	- -	78.0	- -	- -	78.0	72.0	70.0	66.0	61.0
23	61.0	60.0	60.0	60.0	58.0	60.0	62.0	- -	65.0	67.0	- -	63.0	- -	60.0	60.0	60.0
24	57.0	56.0	55.0	54.0	57.0	60.0	64.0	65.0	66.0	- -	73.0	73.0	74.0	63.0	62.0	61.0
25	60.0	60.0	58.0	57.0	58.0	64.0	66.0	70.0	72.0	72.0	72.0	71.0	68.0	65.0	64.0	64.0
26	62.0	61.0	60.0	58.0	59.0	64.5	66.0	70.0	71.0	71.0	71.0	70.0	70.0	68.0	66.0	63.0
27	63.0	62.0	62.0	62.0	63.0	68.0	72.0	72.0	75.0	- -	- -	74.0	69.0	69.0	68.0	- -
28	66.0	66.0	66.0	66.0	66.5	69.0	70.0	- -	74.0	74.0	72.0	72.0	69.0	69.0	68.0	67.0
29	67.0	66.5	66.0	66.0	67.0	69.0	69.0	69.5	72.0	- -	- -	73.0	69.0	67.0	66.0	66.0
30	65.0	65.0	65.0	65.0	65.0	68.0	66.0	- -	71.0	- -	- -	75.0	68.0	68.0	68.0	64.0
31	60.0	58.0	57.0	56.0	56.0	58.0	62.0	- -	65.0	68.0	68.0	68.0	66.0	60.0	59.0	58.0
Hourly means.	66.76	66.15	65.63	65.23	65.67	68.82	70.10	73.15	74.83	75.30	75.20	74.17	72.19	69.03	68.26	67.33

Hosted by Google

Mean time.	0h. 5m.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.	Noon.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.
1861.	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°
September 1	56.0	54.0	54.0	54.0	55.0	59.0	61.0	64.0	68.0	66.0	67.0	68.0	66.0	62.0	61.0	59.0
2	58.0	58.0	57.5	57.0	56.0	58.0	64.0	- -	68.0	72.0	72.0	73.0	72.0	66.0	66.0	66.0
3	65.0	66.0	65.0	64.0	64.0	68.0	69.0	72.0	- -	- -	- -	78.0	74.0	73.0	72.0	74.0
4	68.0	67.0	65.0	66.0	66.0	68.0	72.0	- -	76.0	- -	- -	72.0	70.0	69.0	68.0	66.0
5	66.0	65.0	64.0	61.0	61.0	62.0	64.0	- -	- -	- -	- -	63.0	63.0	63.0	63.0	63.0
6	65.0	65.0	65.0	65.0	66.0	67.0	68.0	- -	72.0	- -	- -	72.0	70.0	66.0	66.0	65.0
7	62.0	62.0	62.0	61.0	62.0	66.0	70.0	- -	76.0	- -	75.0	- -	- -	67.0	66.0	66.0
8	65.0	63.0	62.0	61.0	60.0	63.0	63.0	66.0	69.0	69.0	68.0	68.0	68.0	66.0	65.0	64.0
9	62.0	62.0	62.0	62.0	62.0	67.0	- -	68.0	70.0	- -	74.0	75.0	71.0	67.0	66.0	66.0
10	69.0	68.0	66.5	64.0	66.0	69.0	71.0	- -	82.0	- -	85.0	82.5	- -	73.0	70.0	69.0
11	68.0	68.0	69.0	69.0	69.0	70.0	70.0	70.0	75.0	73.0	74.0	74.0	74.0	75.0	74.0	74.0
12	67.0	64.0	64.0	63.0	64.0	67.0	68.0	64.0	- -	- -	72.0	72.0	- -	66.0	64.0	63.0
13	62.0	62.0	62.0	62.0	62.0	64.0	66.0	- -	72.0	- -	74.0	- -	69.0	64.0	63.0	63.0
14	60.0	59.0	58.0	58.0	58.0	62.0	64.0	- -	- -	- -	75.0	73.0	70.0	67.0	67.0	66.0
15	65.0	65.0	65.0	64.0	64.0	66.0	68.0	70.0	75.0	80.0	78.0	78.0	72.0	72.0	72.0	72.0
16	73.0	70.0	68.0	68.0	68.0	68.0	- -	- -	- -	76.0	- -	74.0	70.0	70.0	69.0	69.0
17	68.5	68.0	68.0	69.0	69.0	70.5	- -	- -	- -	76.0	76.0	74.0	68.0	66.0	67.0	65.0
18	65.0	64.0	62.0	60.0	59.0	62.0	64.0	62.0	69.0	- -	66.0	68.0	68.0	64.0	63.0	63.0
19	62.0	61.0	62.0	61.0	62.0	65.0	66.0	- -	- -	75.0	73.0	74.0	66.0	65.0	- -	63.0
20	62.0	61.0	60.0	60.0	61.0	63.0	- -	70.0	75.0	79.0	78.0	78.0	70.0	69.0	68.0	68.0
21	67.0	66.0	64.5	63.0	64.0	67.0	69.0	72.0	- -	74.0	76.0	70.0	70.0	65.0	62.0	61.0
22	61.0	59.0	57.0	56.0	55.0	55.0	56.0	54.0	58.0	58.0	60.0	60.0	57.0	56.0	55.0	55.0
23	53.0	51.0	51.0	50.0	50.0	55.0	56.0	60.0	64.0	67.0	- -	70.0	64.0	63.0	60.5	60.0
24	56.0	55.0	54.0	53.0	52.0	55.0	60.0	61.0	68.0	66.0	70.0	66.0	64.0	60.0	58.0	56.0
25	- -	54.0	53.0	52.0	51.0	54.0	- -	62.0	70.0	68.0	70.0	68.0	66.0	61.0	60.0	60.0
26	60.0	59.0	58.0	58.0	57.0	60.0	60.0	62.0	69.0	69.0	69.0	69.0	66.0	65.0	64.5	64.0
27	63.0	63.0	62.0	62.0	62.0	63.0	63.0	- -	68.0	70.0	72.0	72.0	70.0	70.0	59.0	59.0
28	55.0	54.0	53.0	51.0	50.0	50.0	- -	- -	54.0	- -	56.0	54.0	52.0	49.0	48.0	47.0
29	46.0	45.0	45.0	44.0	42.0	49.0	- -	52.0	53.0	55.0	56.0	57.0	54.0	49.0	48.0	47.0
30	46.0	46.0	44.0	42.0	42.0	45.0	46.0	54.0	58.0	62.0	61.0	61.0	56.0	52.0	52.0	51.0
Hourly means.	61.91	60.80	60.08	59.33	59.30	61.92	64.26	63.71	68.59	69.72	70.71	70.12	66.67	64.67	63.34	62.80

Mean time.	0h. 5m.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.	Noon.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.
1861.	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°
October 1	49.0	47.0	47.0	46.0	45.0	50.0	50.0	55.0	63.0	67.0	66.0	66.0	66.0	56.0	56.0	56.0
2	58.0	58.0	58.0	59.0	59.0	62.0	62.0	- -	66.0	67.0	67.0	65.0	- -	63.0	63.0	62.0
3	60.0	59.0	59.0	57.0	57.0	61.0	- -	66.0	- -	70.0	73.0	72.0	68.0	64.0	63.0	61.0
4	60.0	59.0	57.0	56.0	56.0	60.0	62.0	- -	- -	- -	- -	74.0	70.0	68.0	66.0	66.0
5	64.0	64.0	64.0	64.0	64.0	64.0	70.0	- -	75.0	- -	77.0	76.0	72.0	70.0	70.0	69.0
6	68.0	66.0	65.0	66.0	64.0	66.0	65.0	70.0	74.0	78.0	78.0	78.0	76.0	74.0	70.0	70.0
7	70.0	70.0	70.0	70.0	68.0	70.0	68.0	- -	73.0	- -	74.0	72.0	68.0	66.0	66.0	66.0
8	65.0	62.0	59.0	57.0	57.0	56.0	58.0	60.0	57.0	58.0	58.0	56.0	54.0	53.0	53.0	52.0
9	52.0	51.0	49.0	49.0	50.0	52.0	- -	- -	54.0	- -	56.0	56.0	57.0	56.0	57.0	56.0
10	56.0	56.0	54.0	54.0	52.0	55.0	56.0	- -	59.0	- -	59.0	58.0	57.0	56.0	56.0	56.0
11	56.0	55.0	55.0	55.0	55.0	57.0	58.0	59.0	66.0	66.0	- -	67.0	62.0	60.0	59.0	59.0
12	60.0	54.0	50.0	48.0	48.0	48.0	49.0	49.0	- -	47.0	- -	56.0	53.0	50.0	50.0	50.0
13	50.0	50.0	49.0	49.0	52.0	50.0	50.0	52.0	- -	52.0	53.0	52.0	50.0	47.0	46.0	46.0
14	43.0	42.0	41.0	40.0	40.0	42.0	46.0	- -	56.0	59.0	60.0	60.0	54.0	52.0	50.0	50.0
15	48.0	46.0	44.0	44.0	44.0	49.0	50.0	- -	54.0	- -	- -	64.0	56.0	56.0	55.0	55.0
16	50.0	49.0	49.0	49.0	49.0	52.0	56.0	58.0	64.0	- -	- -	62.0	59.0	58.0	57.0	57.0
17	54.0	56.0	58.0	- -	58.0	60.0	61.0	- -	68.0	69.0	69.0	69.0	66.0	66.0	65.0	- -
18	66.0	66.0	66.0	66.0	66.0	68.0	69.0	70.0	72.0	- -	- -	- -	68.0	66.0	66.0	66.0
19	64.0	63.0	62.0	62.0	62.0	66.0	66.0	68.0	70.0	72.0	72.0	70.0	68.0	68.0	67.0	66.0
20	64.0	60.0	58.0	56.0	55.0	56.0	56.0	54.0	58.0	58.0	56.0	55.0	54.0	52.0	50.0	49.0
21	48.0	49.0	48.0	47.0	47.0	45.0	47.0	- -	52.0	54.0	53.0	53.0	48.0	48.0	48.0	48.0
22	49.0	49.0	48.5	49.0	50.0	52.0	53.0	54.0	56.0	57.0	57.0	57.0	55.0	55.0	55.0	55.0
23	54.0	53.0	53.0	52.0	52.0	56.0	56.0	58.0	60.0	52.0	52.0	50.0	42.0	42.0	41.0	40.0
24	38.0	38.0	37.0	37.0	36.0	38.0	40.0	40.0	44.0	46.0	46.0	46.0	44.0	42.0	40.0	38.0
25	35.0	35.0	34.0	31.0	32.0	38.0	40.0	44.0	- -	52.0	51.0	52.0	48.0	47.0	47.0	45.0
26	44.0	44.0	44.5	45.0	46.0	48.0	49.0	52.0	- -	59.0	56.0	56.0	56.0	56.0	55.0	55.0
27	54.0	54.0	54.0	54.0	53.0	48.0	48.0	50.0	49.0	51.0	50.0	49.0	46.0	42.0	40.0	39.0
28	36.0	35.0	34.0	34.0	33.0	35.0	37.0	40.0	- -	- -	- -	44.0	40.0	38.0	37.0	36.0
29	35.0	34.0	33.5	33.0	33.0	36.0	40.0	46.0	52.0	53.0	54.0	54.0	48.0	46.0	44.0	43.0
30	42.0	43.0	45.0	46.0	46.0	46.0	49.0	- -	- -	- -	58.0	54.0	50.0	49.0	48.0	- -
31	45.0	42.0	40.0	40.0	40.0	42.0	45.0	- -	- -	- -	54.0	- -	46.5	44.0	42.0	40.0
Hourly means	52.81	51.90	51.15	50.50	50.61	52.52	53.66	55.00	61.00	59.35	60.38	60.10	56.72	55.16	54.26	53.48

Hosted by Google

Mean time.	0h. 5m.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.	Noon.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.
1861.	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°
November 1	40.0	38.0	37.0	36.0	36.0	38.0	40.0	46.0	56.0	- -	51.0	50.0	48.0	51.0	50.0	50.0
2	51.0	53.0	54.0	54.5	57.0	59.0	- -	- -	64.0	63.0	63.0	63.0	59.0	56.0	57.0	57.0
3	50.0	48.0	47.0	46.0	47.0	47.0	49.0	49.0	53.0	52.0	50.0	48.0	47.0	45.0	44.0	44.0
4	43.0	42.0	41.0	41.0	40.0	41.0	44.0	48.0	- -	51.0	54.0	52.0	44.0	44.0	41.0	40.0
5	39.0	37.0	36.0	35.0	36.0	42.0	44.0	48.0	50.0	51.0	50.0	51.0	46.0	45.0	44.0	45.0
6	46.0	46.0	47.0	46.0	47.0	49.0	50.0	52.0	50.0	- -	48.0	48.0	45.0	45.0	48.0	46.0
7	43.0	42.0	41.0	40.0	40.0	42.0	41.0	41.0	- -	- -	45.0	44.0	41.0	39.0	35.0	35.0
8	33.0	33.0	32.0	32.0	32.0	34.0	42.0	45.0	- -	- -	- -	56.0	49.0	48.0	46.0	46.0
9	43.0	42.0	41.0	40.0	40.0	44.0	46.0	48.0	46.0	48.0	46.0	45.5	44.0	44.0	44.0	43.0
10	40.0	37.0	36.0	34.0	34.0	35.0	37.0	- -	43.0	47.0	47.0	47.0	43.0	43.0	42.0	41.0
11	43.0	43.0	43.5	44.0	44.0	47.0	50.5	49.0	58.0	60.0	- -	- -	50.0	46.0	44.0	45.0
12	46.0	42.0	40.0	38.0	37.0	40.0	41.0	- -	50.0	49.0	50.0	47.0	43.0	40.0	41.0	40.0
13	38.0	37.0	37.0	37.0	37.0	38.0	44.0	44.0	- -	- -	- -	- -	53.0	50.0	49.0	49.0
14	50.0	49.0	48.5	47.0	45.0	45.0	49.0	50.0	53.0	- -	53.0	50.0	47.5	47.0	46.0	45.0
15	46.0	44.0	42.0	40.0	40.0	39.0	40.0	40.0	39.0	- -	39.0	39.0	37.0	36.0	36.0	35.0
16	37.0	35.0	33.0	33.0	33.0	31.0	33.0	35.0	36.0	34.0	- -	34.0	33.0	33.0	33.5	34.0
17	35.0	35.0	35.0	35.0	35.0	36.0	36.0	36.0	38.0	40.0	40.0	40.0	38.0	38.0	38.0	38.0
18	37.0	36.0	35.0	34.0	34.0	35.0	37.0	39.0	40.0	- -	41.0	40.0	38.0	36.0	36.0	36.0
19	34.0	33.0	32.0	31.0	31.0	30.5	33.0	34.0	39.0	40.0	40.0	41.0	35.0	33.0	31.0	29.0
20	29.0	29.0	29.0	29.0	29.0	32.0	33.0	36.0	37.0	- -	40.0	40.0	40.0	40.0	40.0	40.0
21	38.0	38.0	38.0	37.0	37.0	37.0	39.0	44.0	- -	- -	46.0	46.0	42.0	38.0	38.0	37.0
22	36.0	33.0	33.0	33.0	32.0	33.0	- -	40.0	45.0	49.0	46.0	44.0	41.0	40.0	41.0	41.0
23	42.0	43.0	44.0	44.0	44.0	40.0	39.0	38.0	39.0	- -	40.0	40.0	35.0	36.0	36.0	36.0
24	32.0	- -	- -	- -	- -	33.0	35.0	38.0	39.0	38.0	37.0	37.0	35.0	32.0	32.0	33.0
25	33.0	31.0	30.0	29.0	29.0	30.0	32.0	32.5	37.0	36.0	35.0	36.0	35.0	34.0	34.0	34.0
26	32.0	31.0	31.0	30.0	30.0	33.0	33.5	36.0	39.0	40.0	39.0	39.0	36.0	32.0	32.0	31.5
27	29.0	28.0	- -	- -	29.0	32.0	- -	- -	38.0	- -	- -	38.0	37.0	37.0	37.0	37.0
28	36.0	32.0	31.0	31.0	30.0	32.0	35.0	- -	- -	48.0	45.0	44.0	43.0	42.0	41.0	41.0
29	43.0	42.0	42.0	41.0	40.0	50.0	53.0	56.0	60.0	60.0	- -	60.0	59.0	56.0	55.0	54.0
30	46.0	43.0	41.0	40.0	38.5	37.0	39.0	- -	- -	- -	- -	39.0	36.0	34.0	32.0	32.0
Hourly means.	39.67	38.69	38.46	37.77	37.36	38.72	40.56	42.69	45.61	47.41	45.43	44.95	42.65	41.33	40.78	40.48

Mean time.	0h. 5m.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.	Noon.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.
1861.	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°
December 1	29.0	28.0	29.0	31.0	33.0	35.0	38.0	38.0	40.0	40.0	41.0	40.0	40.0	41.0	40.0	40.0
2	42.0	40.0	38.0	37.5	34.0	32.0	33.0	33.0	35.0	- -	- -	33.0	31.5	31.0	31.0	30.0
3	30.0	- -	- -	- -	- -	- -	26.0	28.0	31.0	- -	32.0	31.0	28.0	27.5	27.0	- -
4	- -	- -	- -	- -	- -	- -	- -	30.0	31.5	32.0	33.0	32.0	28.0	27.0	26.0	26.0
5	- -	- -	- -	- -	- -	- -	31.5	33.0	36.0	40.0	41.0	41.0	37.0	33.0	32.0	32.0
6	30.5	29.0	29.0	29.0	29.0	31.0	33.0	- -	44.0	47.0	48.0	48.0	40.0	37.0	35.0	34.0
7	32.0	31.0	31.0	31.0	31.0	32.0	34.0	- -	42.0	41.0	44.0	46.0	40.0	38.0	38.0	38.0
8	32.0	31.0	31.0	31.0	32.0	34.5	35.0	39.0	44.0	54.0	55.0	54.0	54.0	51.0	47.5	46.0
9	44.0	42.0	40.0	39.0	38.0	38.0	40.0	42.0	56.0	57.0	57.0	60.0	50.0	48.0	46.0	45.0
10	40.0	41.0	42.0	42.0	43.0	45.0	47.0	50.0	52.0	- -	58.0	58.0	54.0	53.0	54.0	54.0
11	50.0	49.0	48.0	48.0	48.0	50.0	49.0	46.0	45.0	- -	- -	39.0	34.0	32.0	32.0	32.0
12	30.0	28.0	27.0	26.0	24.0	26.5	- -	30.0	32.0	34.5	33.0	35.0	30.0	- -	- -	26.0
13	24.0	- -	- -	- -	- -	22.0	24.0	27.0	34.0	- -	37.0	36.0	33.0	30.0	30.0	- -
14	- -	- -	- -	- -	- -	27.5	- -	- -	38.0	42.0	41.0	42.0	36.0	36.0	36.0	- -
15	34.0	36.0	38.0	40.0	40.0	38.0	38.0	38.0	38.0	38.0	40.0	39.0	32.0	30.0	29.0	- -
16	25.0	25.0	24.0	24.0	25.0	28.0	32.0	33.0	40.0	- -	- -	42.0	42.0	37.0	37.0	38.0
17	40.0	41.0	41.0	41.0	42.0	39.0	40.0	- -	- -	- -	- -	47.0	40.0	38.0	38.0	37.0
18	36.0	32.0	32.0	32.0	31.0	33.5	36.0	40.0	46.0	48.0	49.0	46.0	41.0	37.0	34.0	33.0
19	32.0	31.0	30.0	30.0	30.0	30.0	32.0	36.0	42.0	46.0	47.0	46.0	40.0	39.0	38.0	38.0
20	34.0	34.0	34.0	34.0	34.0	37.0	40.0	40.0	50.0	48.0	46.0	45.0	39.0	38.0	37.0	37.0
21	32.0	30.0	28.0	28.0	- -	- -	26.0	28.0	31.0	32.0	31.5	31.0	27.0	- -	- -	- -
22	26.0	27.0	27.0	28.0	28.0	30.0	32.0	31.0	35.0	35.0	34.0	34.0	33.0	33.0	32.5	- -
23	36.0	34.0	34.0	34.0	33.0	33.0	34.0	34.0	36.0	36.0	- -	34.0	31.0	32.0	32.0	31.0
24	30.0	30.0	30.0	30.0	29.0	30.0	31.0	- -	32.0	32.0	32.0	32.0	31.0	30.0	30.0	29.0
25	31.0	31.0	31.0	30.0	- -	- -	30.0	30.0	31.0	35.0	34.0	35.0	30.0	- -	- -	- -
26	26.0	25.0	26.0	27.0	28.0	30.0	31.0	32.0	- -	- -	36.0	36.0	35.0	33.0	33.0	33.0
27	35.0	36.0	37.0	37.0	37.0	35.0	33.0	34.0	32.0	32.0	- -	32.0	29.0	29.0	- -	- -
28	25.0	25.0	26.0	26.0	26.0	25.0	27.5	29.0	32.0	33.0	32.0	31.0	29.0	23.0	24.0	24.0
29	24.0	24.0	25.0	25.0	26.0	27.0	28.0	32.0	33.0	35.0	33.0	34.0	31.0	- -	27.0	26.5
30	26.0	28.0	28.0	29.0	32.0	33.0	32.0	33.0	- -	- -	37.0	36.0	34.0	29.0	29.0	29.0
31	30.0	29.0	27.0	- -	- -	25.0	29.0	31.0	36.0	41.0	40.0	- -	35.0	34.0	34.0	34.0
Hourly means.	32.34	32.19	32.04	32.38	32.74	32.58	33.64	34.50	38.39	39.93	40.46	39.83	35.96	35.06	34.41	34.46

Hosted by Google

Mean time.		8h. 5m.	9h. 5m.	10h. 5m.	Noon.	2h. 5m.	3h. 5m.	4h. 5m.
1861.		°	°	°	°	°	°	°
January	1	12.0	31.0	49.0	54.0	47.0	- -	- -
	2	18.0	22.0	45.0	51.0	52.0	47.0	- -
	3	- -	- -	- -	- -	- -	- -	- -
	4	- -	- -	- -	- -	48.0	42.0	46.0
	5	- -	46.0	54.0	- -	55.0	52.0	41.0
	6	24.0	40.0	49.0	56.0	58.0	57.0	55.0
	7	- -	- -	- -	- -	- -	- -	52.0
	8	39.5	51.0	- -	- -	64.0	58.0	50.0
	9	- -	- -	- -	- -	- -	- -	- -
	10	- -	- -	- -	- -	- -	- -	43.0
	11	- -	- -	- -	- -	- -	- -	- -
	12	- -	- -	- -	- -	- -	43.0	- -
	13	11.0	28.0	32.0	36.0	34.0	35.0	36.0
	14	- -	- -	- -	- -	- -	- -	- -
	15	- -	- -	- -	- -	- -	- -	- -
	16	- -	- -	- -	- -	- -	- -	- -
	17	44.5	- -	- -	- -	- -	- -	- -
	18	- -	- -	- -	- -	- -	- -	- -
	19	31.5	- -	42.0	44.0	69.0	71.5	67.0
	20	- -	- -	- -	44.0	47.0	47.5	46.0
	21	- -	- -	- -	- -	- -	- -	- -
	22	28.0	28.0	- -	48.5	45.5	47.0	44.0
	23	- -	- -	- -	- -	- -	- -	- -
	24	- -	- -	- -	- -	- -	- -	- -
	25	- -	- -	- -	- -	- -	- -	- -
	26	- -	- -	- -	- -	- -	- -	- -
	27	18.0	38.0	49.0	59.0	60.0	58.0	50.0
	28	- -	60.0	42.0	46.0	42.0	43.0	33.0
	29	- -	- -	- -	- -	69.0	68.0	58.5
	30	41.0	42.0	38.0	38.0	37.0	36.0	36.0
	31	- -	- -	46.0	53.0	- -	52.0	42.0
Hourly means.		26.75	38.60	44.60	48.14	51.96	50.47	46.63

Mean time.		8h. 5m.	9h. 5m.	10h. 5m.	Noon.	2h. 5m.	3h. 5m.	4h. 5m.
1861.		°	°	°	°	°	°	°
February	1	- -	- -	- -	- -	- -	- -	- -
	2	- -	- -	- -	- -	- -	- -	- -
	3	- -	- -	- -	- -	- -	- -	- -
	4	- -	- -	- -	- -	- -	- -	- -
	5	- -	- -	- -	- -	- -	- -	- -
	6	37.5	50.0	- -	61.0	- -	- -	49.5
	7	- -	49.0	54.0	62.0	- -	- -	34.5
	8	12.5	21.0	24.0	- -	40.5	- -	- -
	9	- -	- -	- -	- -	- -	- -	- -
	10	- -	- -	- -	- -	- -	- -	- -
	11	- -	- -	- -	- -	- -	- -	- -
	12	68.0	76.0	71.0	- -	- -	69.0	68.0
	13	- -	- -	77.5	- -	- -	- -	- -
	14	- -	- -	- -	- -	- -	- -	- -
	15	- -	- -	- -	- -	- -	- -	- -
	16	- -	- -	- -	- -	- -	- -	- -
	17	46.0	57.0	- -	- -	- -	- -	- -
	18	- -	- -	46.0	- -	- -	- -	- -
	19	- -	- -	- -	- -	- -	- -	- -
	20	- -	- -	56.0	54.0	57.0	59.0	56.0
	21	40.5	45.0	45.5	48.0	- -	47.0	46.0
	22	- -	59.5	- -	- -	- -	- -	- -
	23	- -	- -	- -	- -	- -	- -	- -
	24	- -	52.0	54.0	52.0	48.0	43.0	38.0
	25	39.0	59.0	61.5	54.0	54.0	57.5	52.0
	26	- -	- -	- -	- -	- -	- -	- -
	27	42.0	64.5	76.5	86.0	86.0	- -	82.0
	28	49.0	74.0	80.0	90.0	- -	82.0	80.0
Hourly means.		41.81	55.18	56.91	63.37	57.10	59.58	56.22

Mean time.		8h. 5m.	9h. 5m.	10h. 5m.	Noon.	2h. 5m.	3h. 5m.	4h. 5m.
1861.		°	°	°	°	°	°	°
March	1	57.0	73.0	89.5	80.0	88.0	82.0	80.0
	2	61.0	76.0	- -	97.0	99.0	90.0	86.0
	3	58.0	76.0	81.5	90.0	88.0	87.0	84.0
	4	- -	- -	- -	- -	- -	- -	- -
	5	45.0	- -	- -	- -	48.0	46.0	- -
	6	34.0	46.0	48.0	64.0	- -	- -	- -
	7	32.0	42.0	43.0	46.0	52.0	50.0	51.0
	8	- -	- -	- -	- -	- -	- -	- -
	9	- -	- -	- -	- -	- -	- -	- -
	10	- -	- -	- -	- -	- -	51.0	50.0
	11	36.0	45.0	47.5	- -	52.0	53.5	50.5
	12	- -	- -	- -	- -	- -	- -	- -
	13	- -	- -	- -	- -	- -	- -	- -
	14	- -	- -	- -	- -	- -	- -	- -
	15	- -	- -	- -	- -	- -	- -	- -
	16	50.0	54.0	62.0	67.0	70.0	71.0	69.0
	17	- -	- -	- -	- -	- -	- -	- -
	18	- -	- -	- -	- -	- -	- -	- -
	19	- -	- -	48.0	47.0	52.0	57.5	52.0
	20	41.0	- -	- -	- -	- -	- -	- -
	21	40.0	45.5	45.5	47.5	- -	- -	- -
	22	43.0	45.5	- -	56.0	58.0	58.0	57.0
	23	51.0	51.0	71.0	65.5	67.5	- -	- -
	24	55.5	60.0	63.5	67.0	63.0	64.0	60.0
	25	64.0	57.5	64.0	63.5	- -	- -	- -
	26	- -	- -	- -	- -	- -	- -	- -
	27	- -	- -	- -	- -	- -	70.0	67.0
	28	55.5	64.5	65.0	- -	- -	- -	- -
	29	61.5	67.5	70.0	72.0	70.5	- -	71.5
	30	65.0	78.0	- -	- -	74.0	73.0	61.5
	31	- -	- -	- -	- -	- -	- -	- -
Hourly means.		49.97	58.77	61.42	66.35	67.85	65.62	64.58

Mean time.		6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.	Noon.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.
1861.		°	°	°	°	°	°	°	°	°
April	1	- -	- -	- -	- -	- -	- -	- -	- -	- -
	2	- -	- -	- -	- -	- -	- -	- -	- -	- -
	3	- -	- -	54.0	- -	70.0	- -	- -	67.0	- -
	4	- -	- -	- -	- -	- -	- -	- -	- -	- -
	5	32.0	61.0	73.0	- -	- -	- -	- -	- -	- -
	6	- -	- -	- -	- -	- -	- -	- -	- -	56.0
	7	- -	- -	- -	- -	- -	- -	- -	- -	- -
	8	- -	- -	- -	- -	- -	- -	- -	- -	- -
	9	- -	- -	- -	- -	- -	- -	- -	- -	- -
	10	- -	- -	- -	- -	- -	- -	- -	- -	- -
	11	37.0	66.0	81.0	84.0	- -	- -	- -	78.0	- -
	12	- -	- -	- -	- -	- -	- -	- -	- -	- -
	13	- -	- -	- -	- -	- -	- -	- -	- -	- -
	14	51.0	73.0	78.5	70.0	- -	- -	67.5	64.0	63.0
	15	45.0	- -	- -	- -	- -	- -	- -	- -	- -
	16	- -	- -	- -	- -	- -	- -	- -	- -	- -
	17	- -	- -	- -	- -	- -	- -	- -	- -	- -
	18	- -	- -	- -	- -	- -	- -	- -	76.0	69.5
	19	43.0	- -	- -	- -	- -	- -	- -	- -	- -
	20	37.0	56.0	62.0	- -	- -	(63.0)	- -	68.0	- -
	21	39.5	74.0	76.0	- -	74.0	89.0	88.0	82.0	70.0
	22	58.0	85.0	91.0	86.0	85.0	- -	97.0	96.0	- -
	23	60.5	77.0	87.0	91.5	111.0	- -	97.0	86.0	80.0
	24	64.0	78.0	85.0	- -	92.0	- -	- -	- -	- -
	25	56.0	78.0	78.0	- -	83.0	82.0	- -	78.0	68.0
	26	48.0	60.0	85.0	86.0	91.0	98.0	100.0	100.0	74.0
	27	59.5	88.0	- -	- -	- -	- -	95.0	93.0	79.0
	28	- -	- -	- -	- -	- -	- -	- -	- -	- -
	29	48.5	83.0	86.0	88.0	90.0	- -	93.0	98.5	79.0
	30	58.0	81.0	81.5	- -	- -	- -	- -	67.0	65.0
Hourly means.		49.13	73.85	78.31	84.25	87.00	89.67	91.07	81.04	70.35

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Mean time	6h. 5m.	8h. 5m.	9h. 5m.	10h.5m.	Noon.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.
1861.	°	°	°	°	°	°	°	°	°
May 1	- -	- -	71.0	72.5	- -	- -	- -	60.0	- -
2	- -	54.0	58.0	62.0	66.0	- -	- -	61.5	- -
3	- -	- -	- -	- -	- -	- -	- -	- -	- -
4	- -	- -	- -	- -	- -	- -	- -	73.0	70.0
5	- -	69.0	74.0	- -	- -	- -	- -	- -	- -
6	- -	- -	- -	- -	- -	- -	- -	- -	- -
7	51.0	80.0	87.0	- -	80.0	82.0	- -	79.0	74.5
8	53.0	81.0	- -	- -	74.0	- -	- -	67.0	61.0
9	45.0	82.0	83.0	- -	- -	- -	- -	80.0	73.0
10	- -	- -	- -	- -	- -	- -	- -	- -	- -
11	- -	- -	- -	- -	82.0	- -	- -	89.0	74.0
12	56.0	84.0	93.0	95.0	97.0	102.0	86.5	- -	- -
13	62.0	72.0	- -	82.0	90.0	- -	101.0	98.0	78.0
14	- -	- -	- -	- -	94.0	- -	- -	87.0	77.0
15	- -	87.0	94.0	- -	95.0	- -	97.0	96.5	77.0
16	56.0	76.0	80.0	79.0	- -	- -	- -	77.0	76.0
17	(49.0)	70.0	- -	- -	76.0	- -	- -	74.0	(66.0)
18	(45.0)	74.0	79.0	- -	- -	- -	75.0	79.5	74.0
19	- -	- -	- -	- -	- -	- -	- -	- -	- -
20	- -	- -	- -	- -	- -	- -	- -	- -	- -
21	- -	75.0	- -	82.0	83.0	89.0	84.0	76.0	71.5
22	51.0	80.0	92.0	98.5	- -	88.0	- -	80.0	83.5
23	48.0	73.0	97.0	93.0	95.0	- -	- -	- -	73.0
24	54.0	86.0	- -	- -	84.0	87.0	91.0	94.0	- -
25	- -	- -	- -	- -	84.0	- -	- -	- -	92.0
26	64.0	97.0	107.5	96.0	- -	- -	- -	91.0	- -
27	71.0	107.0	105.0	- -	- -	- -	84.0	77.0	70.0
28	55.0	73.0	83.5	- -	80.0	80.0	- -	80.5	82.0
29	- -	- -	- -	- -	81.0	80.0	78.0	78.0	- -
30	48.0	86.0	96.0	95.0	92.0	- -	- -	93.0	84.0
31	56.0	81.5	- -	90.0	87.0	85.0	84.0	(93.0)	79.0
H'y means	55.00	79.37	86.67	85.91	84.71	86.62	86.72	80.52	76.05

Mean time.	6h. 5m.	8h. 5m.	9h. 5m.	10h.5m.	Noon.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.
1861.	°	°	°	°	°	°	°	°	°
June 1	61.0	87.0	87.0	- -	93.0	89.0	- -	- -	- -
2	67.0	93.0	92.0	102.0	105.0	95.0	100.0	98.0	- -
3	74.0	90.0	- -	- -	- -	- -	98.0	98.0	- -
4	- -	- -	- -	- -	- -	- -	- -	- -	- -
5	- -	- -	- -	- -	- -	- -	- -	- -	- -
6	- -	- -	- -	- -	- -	- -	- -	- -	- -
7	- -	- -	- -	- -	- -	- -	- -	- -	- -
8	- -	- -	- -	- -	90.0	91.0	99.5	97.0	- -
9	- -	- -	- -	- -	- -	93.0	97.0	97.5	85.0
10	62.0	88.0	93.0	101.0	100.0	- -	- -	98.0	- -
11	72.5	91.0	- -	97.0	101.0	- -	95.0	94.0	97.0
12	72.0	106.0	109.0	107.0	105.0	97.0	- -	92.0	- -
13	67.0	90.0	98.5	105.0	93.0	(84.5)	(89.5)	92.0	94.0
14	60.0	86.0	101.0	- -	94.0	96.0	101.0	98.0	86.5
15	73.0	104.5	108.0	- -	106.0	108.0	112.5	102.0	95.0
16	73.5	102.5	110.0	98.0	96.0	94.0	93.0	89.0	80.0
17	- -	80.0	- -	87.5	86.0	- -	- -	85.0	82.0
18	65.0	82.0	101.5	97.0	93.0	97.0	99.0	104.0	91.0
19	61.5	92.0	- -	101.5	96.0	- -	99.0	103.0	97.0
20	73.0	92.0	108.0	- -	98.0	(97.0)	- -	99.0	85.0
21	73.0	84.5	92.0	94.5	100.0	107.0	- -	114.0	96.0
22	75.0	96.0	- -	104.0	(99.0)	104.0	102.0	100.0	94.0
23	68.0	100.0	101.0	114.0	101.5	100.0	104.0	101.0	98.5
24	71.5	94.0	100.0	102.0	96.0	99.0	97.0	96.5	89.0
25	64.5	(87.0)	103.0	- -	(93.0)	- -	- -	93.0	88.0
26	- -	- -	- -	- -	104.0	104.0	105.0	105.0	75.0
27	71.0	91.0	101.5	- -	98.0	- -	- -	99.0	92.0
28	69.0	97.0	92.0	94.0	102.0	- -	109.0	98.0	83.0
29	68.0	(75.0)	(89.0)	96.0	101.0	98.0	102.0	100.0	80.0
30	- -	- -	- -	- -	- -	- -	- -	- -	- -
H'y means	68.62	92.32	99.84	100.03	98.02	98.13	100.81	98.17	88.32

Mean time.	6h. 5m.	8h. 5m.	9h. 5m.	10h.5m.	Noon.	2h. 5m	3h. 5m.	4h. 5m.	6h. 5m.
1861.	°	°	°	°	°	°	°	°	°
July 1	- -	- -	- -	- -	- -	- -	- -	- -	- -
2	60.5	80.0	80.0	84.0	83.0	82.0	- -	81.0	- -
3	60.0	78.0	86.0	90.0	91.0	- -	96.0	97.0	89.0
4	62.0	92.0	101.0	98.0	100.0	101.0	104.5	100.0	- -
5	63.0	97.0	95.0	- -	99.0	97.5	103.0	102.5	88.0
6	73.0	78.0	- -	(87.0)	(85.0)	- -	- -	- -	90.5
7	74.0	92.0	103.0	104.0	99.0	100.0	103.0	108.5	96.0
8	72.0	105.0	- -	- -	109.5	108.0	95.0	94.0	83.0
9	74.0	103.0	113.5	- -	110.0	- -	114.0	112.0	- -
10	70.0	87.5	98.0	- -	100.0	- -	96.0	104.0	- -
11	65.0	82.5	99.0	- -	94.0	- -	95.0	84.0	- -
12	61.0	78.0	93.0	- -	94.0	92.0	94.0	100.5	88.5
13	- -	- -	- -	- -	- -	93.0	94.0	- -	- -
14	61.5	- -	- -	92.0	- -	- -	- -	- -	- -
15	61.0	89.0	(80.5)	- -	90.0	- -	- -	- -	- -
16	69.0	96.0	101.5	98.0	- -	- -	- -	- -	- -
17	67.0	94.0	103.0	107.0	104.0	- -	- -	105.5	96.0
18	69.0	96.0	- -	104.0	98.0	- -	97.0	104.5	- -
19	72.0	- -	- -	- -	- -	- -	- -	104.0	- -
20	- -	98.5	99.0	104.0	96.0	100.0	98.0	94.0	90.0
21	71.0	74.0	96.0	- -	88.0	(82.0)	- -	90.0	100.0
22	- -	- -	- -	- -	- -	- -	- -	- -	- -
23	- -	84.0	90.0	96.0	96.0	98.0	88.5	91.0	94.0
24	- -	95.0	92.0	104.0	94.0	- -	- -	97.5	- -
25	- -	92.0	103.0	104.0	97.5	- -	86.0	96.0	80.0
26	(61.0)	90.0	96.0	- -	100.0	- -	105.0	100.5	78.0
27	68.0	94.0	- -	- -	- -	- -	96.0	86.0	- -
28	66.0	98.0	96.0	102.0	- -	100.0	95.0	- -	- -
29	- -	- -	- -	- -	106.0	104.0	- -	92.0	89.0
30	- -	102.0	105.0	110.0	108.0	- -	109.0	- -	93.0
31	- -	104.0	106.0	107.0	109.0	- -	- -	112.0	- -
H'y means	66.95	91.18	97.80	100.27	98.45	97.77	98.28	98.02	89.64

Mean time.	6h. 5m.	8h. 5m.	9h. 5m.	10h.5m.	Noon.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.
1861.	°	°	°	°	°	°	°	°	°
August 1	- -	- -	- -	- -	- -	98.0	96.0	99.5	87.0
2	- -	103.0	96.0	109.5	- -	110.5	95.0	97.0	92.0
3	- -	- -	- -	105.0	99.0	- -	- -	101.5	95.0
4	76.0	105.0	105.0	102.0	107.0	105.5	107.0	110.0	- -
5	74.0	108.5	114.0	- -	112.0	- -	114.0	95.0	- -
6	75.0	86.0	98.0	101.0	108.0	109.0	100.0	106.0	105.0
7	- -	97.0	104.0	- -	104.0	- -	- -	- -	90.0
8	- -	98.5	103.0	- -	110.0	111.0	113.0	116.0	92.0
9	- -	- -	- -	- -	- -	- -	- -	- -	- -
10	- -	95.0	96.0	- -	97.0	106.0	108.0	107.0	- -
11	78.0	101.0	104.0	100.0	105.0	- -	- -	- -	- -
12	- -	- -	- -	- -	- -	- -	- -	- -	- -
13	- -	- -	- -	- -	- -	- -	- -	- -	- -
14	- -	- -	- -	- -	- -	- -	- -	- -	- -
15	56.0	82.0	98.0	102.0	98.0	- -	- -	99.0	- -
16	61.0	92.0	98.5	- -	- -	- -	- -	- -	- -
17	- -	- -	- -	- -	- -	- -	- -	- -	- -
18	- -	- -	- -	- -	- -	- -	- -	- -	- -
19	- -	- -	- -	- -	- -	- -	- -	- -	- -
20	- -	- -	- -	- -	- -	- -	- -	- -	- -
21	60.0	82.0	92.0	- -	- -	94.0	97.0	94.0	- -
22	- -	- -	92.5	- -	- -	- -	- -	- -	- -
23	62.0	81.0	87.5	- -	(82.0)	92.0	- -	(75.0)	- -
24	69.5	85.0	93.5	103.5	97.0	- -	94.0	93.5	86.0
25	- -	84.0	102.5	108.0	92.0	103.0	98.0	99.5	79.5
26	60.0	82.0	100.5	105.0	93.0	- -	- -	- -	- -
27	- -	- -	- -	- -	- -	- -	- -	- -	- -
28	- -	- -	- -	- -	- -	- -	- -	- -	- -
29	- -	- -	- -	- -	- -	- -	- -	- -	- -
30	- -	74.0	81.0	- -	97.0	- -	- -	92.5	76.0
31	59.5	81.0	92.0	- -	95.0	96.0	94.0	88.0	77.0
H'y means	66.45	90.41	97.67	104.00	101.00	102.50	101.45	99.89	87.90

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Mean time.	8h. 5m	9h. 5m.	10h. 5m.	Noon.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.
1861.	°	°	°	°	°	°	°	°
September 1	82.0	90.0	98.0	95.0	96.5	96.5	96.5	(72.0)
2	82.0	97.0	- -	95.0	95.0	96.0	89.0	(74.0)
3	98.0	107.0	106.5	- -	- -	- -	98.0	- -
4	- -	- -	- -	- -	- -	- -	- -	- -
5	- -	- -	- -	- -	- -	- -	- -	- -
6	- -	- -	- -	100.0	- -	- -	- -	- -
7	82.0	104.0	- -	102.0	- -	93.0	- -	- -
8	75.0	92.0	94.0	94.0	- -	- -	- -	- -
9	- -	- -	- -	102.0	- -	96.5	93.5	- -
10	- -	- -	- -	- -	- -	102.0	- -	- -
11	- -	- -	- -	- -	- -	- -	- -	- -
12	- -	- -	- -	- -	- -	92.0	88.0	- -
13	81.0	94.5	- -	106.0	- -	96.0	- -	- -
14	- -	- -	- -	- -	- -	98.0	92.0	74.0
15	90.0	106.0	94.0	110.5	103.0	104.0	106.0	80.0
16	95.0	- -	- -	- -	100.0	- -	87.0	74.0
17	- -	- -	- -	- -	92.0	- -	- -	- -
18	- -	- -	- -	93.0	- -	- -	- -	- -
19	- -	- -	- -	- -	96.0	102.0	98.5	- -
20	- -	- -	- -	100.0	95.0	95.0	96.0	- -
21	95.0	98.0	98.5	- -	- -	93.5	- -	- -
22	- -	- -	- -	- -	- -	- -	- -	- -
23	92.0	97.0	87.0	96.0	87.0	- -	86.0	- -
24	(74.0)	95.0	104.0	(84.0)	(82.0)	99.0	89.5	- -
25	75.0	- -	95.0	92.5	92.0	102.0	99.0	- -
26	82.0	89.0	91.0	88.0	(82.0)	(80.0)	- -	- -
27	- -	- -	- -	- -	- -	- -	- -	- -
28	69.5	- -	- -	76.0	- -	73.0	74.0	- -
29	70.0	- -	83.0	85.0	86.0	83.0	78.0	- -
30	72.0	82.0	90.0	90.0	91.0	85.0	86.0	- -
Hourly means.	82.70	95.96	94.64	95.31	93.96	94.50	91.06	76.00

Mean time.	8h. 5m.	9h. 5m.	10h. 5m.	Noon.	2h. 5m.	3h. 5m.	4h. 5m.
1861.	°	°	°	°	°	°	°
October 1	- -	71.0	84.0	93.0	93.0	91.0	85.0
2	- -	- -	- -	- -	- -	- -	- -
3	78.0	- -	101.0	- -	89.5	92.0	92.0
4	81.0	104.0	- -	- -	- -	- -	82.0
5	91.0	103.0	- -	111.0	- -	105.0	107.0
6	82.0	96.0	102.0	115.0	104.0	101.0	100.0
7	92.0	85.0	- -	90.0	- -	- -	- -
8	- -	- -	- -	- -	- -	- -	- -
9	- -	- -	- -	- -	- -	- -	- -
10	- -	- -	- -	- -	- -	- -	- -
11	- -	- -	- -	- -	- -	- -	- -
12	67.5	67.0	73.0	- -	90.0	- -	66.5
13	66.0	73.0	75.0	- -	74.0	71.0	68.5
14	70.0	74.0	- -	88.0	88.0	88.0	86.0
15	74.0	82.0	- -	92.0	- -	- -	84.0
16	- -	- -	- -	- -	- -	- -	- -
17	- -	- -	- -	- -	- -	- -	- -
18	- -	- -	- -	- -	- -	- -	- -
19	- -	- -	- -	- -	- -	- -	- -
20	- -	- -	- -	- -	- -	- -	- -
21	- -	- -	- -	- -	- -	- -	- -
22	- -	- -	- -	- -	- -	- -	- -
23	- -	- -	- -	- -	- -	- -	- -
24	54.0	60.0	62.0	64.0	67.5	63.5	62.0
25	- -	75.0	73.0	- -	- -	- -	- -
26	- -	- -	- -	- -	- -	- -	- -
27	- -	60.0	74.0	72.0	70.0	70.5	64.0
28	51.0	63.0	66.0	- -	- -	- -	62.0
29	54.5	67.5	71.0	83.0	79.0	79.5	78.0
30	63.0	74.0	- -	- -	- -	86.0	66.0
31	57.0	66.5	- -	- -	- -	68.0	- -
Hourly means.	70.07	76.31	78.10	89.78	83.89	83.23	78.79

Mean time.	8h. 5m.	9h. 5m.	10h. 5m.	Noon.	2h. 5m.	3h. 5m.	4h. 5m.
1861.	°	°	°	°	°	°	°
November 1	44.0	68.0	84.0	74.0	- -	63.0	- -
2	- -	- -	- -	- -	- -	- -	- -
3	64.0	71.0	- -	- -	- -	- -	(53.0)
4	- -	63.0	- -	- -	- -	- -	63.5
5	51.0	- -	- -	- -	76.5	82.5	64.0
6	- -	- -	- -	- -	- -	- -	- -
7	55.0	62.0	- -	- -	- -	63.0	62.0
8	- -	- -	- -	- -	- -	- -	- -
9	- -	- -	- -	- -	- -	- -	- -
10	44.0	- -	- -	72.0	65.5	60.0	- -
11	- -	- -	- -	- -	- -	- -	- -
12	58.0	72.0	- -	74.0	72.0	68.5	62.0
13	55.0	68.0	70.0	- -	- -	- -	- -
14	52.0	- -	- -	- -	- -	- -	- -
15	- -	- -	- -	- -	- -	- -	- -
16	38.5	46.0	47.0	50.0	- -	- -	- -
17	- -	- -	- -	- -	- -	- -	(44.0)
18	40.5	51.5	47.5	(47.5)	- -	54.0	51.5
19	40.0	52.0	54.0	66.0	72.0	64.0	57.0
20	- -	- -	- -	- -	- -	- -	- -
21	44.0	61.0	62.0	- -	- -	56.0	52.0
22	41.0	- -	52.0	70.0	60.5	53.5	- -
23	- -	- -	- -	53.0	- -	53.0	49.5
24	- -	- -	- -	58.0	- -	- -	- -
25	34.0	- -	- -	- -	- -	- -	- -
26	- -	49.0	50.0	54.0	51.0	53.0	- -
27	- -	- -	- -	- -	- -	- -	- -
28	- -	- -	- -	- -	- -	- -	- -
29	- -	- -	- -	- -	- -	- -	- -
30	46.5	- -	- -	- -	- -	- -	- -
Hourly means.	47.17	60.33	58.31	63.44	66.25	60.95	57.69

Mean time.	8h. 5m.	9h. 5m.	10h. 5m	Noon.	2h. 5m.	3h. 5m.	4h. 5m.
1861.	°	°	°	°	°	°	°
December 1	- -	- -	- -	- -	- -	- -	- -
2	- -	- -	- -	- -	- -	- -	- -
3	28.5	39.0	44.0	47.0	- -	43.0	34.0
4	27.0	49.0	47.0	52.0	42.0	43.0	39.0
5	32.0	56.0	56.0	62.5	66.0	66.0	52.0
6	- -	43.0	- -	71.0	74.0	71.5	55.0
7	- -	- -	- -	- -	60.0	66.0	58.0
8	- -	- -	- -	68.0	72.0	69.0	66.0
9	41.0	63.0	74.0	89.0	82.0	84.5	69.0
10	- -	- -	- -	74.0	- -	79.0	63.5
11	- -	- -	- -	62.0	- -	- -	48.0
12	28.0	51.0	61.0	57.0	54.0	(39.0)	47.0
13	22.5	42.0	54.0	56.0	- -	54.0	45.0
14	29.0	- -	- -	58.0	52.5	52.0	55.5
15	41.5	55.0	64.0	61.0	67.0	68.0	64.0
16	29.0	53.0	61.0	68.0	- -	- -	55.0
17	41.0	70.0	- -	- -	- -	- -	56.0
18	36.5	40.0	49.5	54.5	55.0	57.0	54.0
19	31.0	50.0	56.0	64.0	68.0	63.0	54.0
20	39.0	55.0	72.5	59.0	53.0	53.0	50.0
21	27.0	48.0	52.0	50.0	48.0	46.5	38.0
22	- -	- -	- -	- -	- -	- -	- -
23	- -	- -	- -	- -	- -	- -	- -
24	32.0	44.0	- -	37.0	39.5	(34.5)	- -
25	28.0	46.0	52.0	54.0	53.0	52.0	50.0
26	- -	- -	- -	- -	- -	52.0	40.0
27	40.0	42.0	46.0	40.0	46.0	- -	42.0
28	29.0	36.0	40.0	46.0	50.0	41.0	- -
29	- -	- -	- -	- -	51.0	42.0	- -
30	- -	39.0	49.0	- -	- -	49.5	44.0
31	- -	44.0	58.0	(50.5)	62.0	52.0	- -
Hourly means	32.33	48.25	55.09	58.57	57.63	57.33	51.26

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Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy
1861.	h. m				
Jan. 1	0 5	NW.	1	C.	1
	2 5	NW.	1	S.	1
	3 5	NW.	1	Clear.	0
	4 5	NW.	1	Clear.	0
	6 5	NW.	1	S.	1
	8 5	W.	1	C.	1
	9 5	SW.	1	Clear.	0
	10 5	SW.	1	C.	1
	Noon.	S.	1	C.	3
	2 5	S.SE.	2	C.	9
	3 5	S.	1	C K.	10
	4 5	S.SW.	1	C. K.	9
	6 5	-	-	-	-
	8 5	NW.	1	Clear.	0
	9 5	NW.	1	Clear.	0
	10 5	NW.	1	Clear.	0
Jan. 4	0 5	NW.	1	C.	2
	2 5	NW.	1	Clear.	0
	3 5	NW.	1	C. K.	9
	4 5	NW.	1	S.	1
	6 5	N.	1	K.	10
	8 5	SW.	1	K.	10
	9 5	E	1	K.	10
	10 5	NW.	1	K.	10
	Noon.	NW.	1	C. K.	9
	2 5	NW.	2	C. S.	4
	3 5	NW.	2	C. S.	3
	4 5	NW.	2	C. S.	3
	6 5	NW.	1	C. S.	2
	8 5	NW.	2	S.	1
	9 5	NW.	2	C. S.	2
	10 5	NW.	1	S.	1
Jan. 7	0 5	N.	1	K.	10
	2 5	NE.	1	K.	10
	3 5	E.	1	N.	10
	4 5	SE.	1	N.	10
	6 5	SE.	1	K.	10
	8 5	S.	1	C. K.	10
	9 5	S.	1	C. K. S.	8
	10 5	-	-	-	-
	Noon	S.	1	N.	10
	2 5	S.	1	K.	10
	3 5	SE.	1	C. K.	10
	4 5	SW.	1	C. K.	6
	6 5	N.	1	C. K. S.	7
	8 5	NW.	1	K.	10
	9 5	W.	1	C. K.	6
	10 5	NW.	1	C. K.	4

Day.	Hour.	Wind. Direction.	Wind. Force	Weather.	Portion cloudy.
1861.	h. m.				
Jan. 2	0 5	NW.	1	C.	4
	2 5	NW.	1	C.	1
	3 5	NW.	1	C.	3
	4 5	NW.	1	C.	3
	6 5	NW.	1	C.	6
	8 5	NW.	1	C.	6
	9 5	W.	1	C.	2
	10 5	W.	1	C.	2
	Noon	SW.	1	C.	4
	2 5	SE.	1	C.	6
	3 5	SE.	1	C	6
	4 5	SE.	1	C. K.	10
	6 5	SE.	1	N.	10
	8 5	E.	1	N.	10
	9 5	E.	1	N.	10
	10 5	E.	1	N.	10
Jan. 5	0 5	N.	1	S.	1
	2 5	NW.	1	S.	1
	3 5	NW.	1	S.	1
	4 5	NW.	1	C. S.	4
	6 5	NW.	1	C. S.	4
	8 5	NW.	1	C. S.	7
	9 5	SW.	1	S.	2
	10 5	S.	1	C.	3
	Noon.	S.	1	C. K.	6
	2 5	S.SE.	2	C. K.	3
	3 5	NW.	1	C.	1
	4 5	W.	1	Clear.	0
	6 5	W.	1	Clear.	0
	8 5	NW.	1	Clear.	0
	9 5	NW.	1	Clear.	0
	10 5	NW.	1	Clear.	0
Jan. 8	0 5	SE.	1	C. K.	9
	2 5	SE.	1	C. K.	4
	3 5	SW.	1	C. K.	2
	4 5	SW.	1	Clear.	0
	6 5	NW.	1	C. K.	2
	8 5	W.	1	C. S.	4
	9 5	W.	1	C. K. S.	8
	10 5	NW.	1	C. K. S.	6
	Noon.	NW.	2	C. K. S.	2
	2 5	N	2	C. K. S.	4
	3 5	NW.	2	C.	2
	4 5	N. by E.	2	C.	3
	6 5	N. by E.	1	K. S.	10
	8 5	N by E.	1	K.	10
	9 5	N. by E.	1	K.	10
	10 5	N. by E.	1	K.	10

Day.	Hour.	Wind. Direction	Wind. Force.	Weather.	Portion cloudy.
1861.	h. m.				
Jan. 3	0 5	NE.	1	N.	10
	2 5	N.	1	N.	10
	3 5	N.	1	N.	10
	4 5	NW.	2	K.	10
	6 5	NW.	2	K.	10
	8 5	NW.	2	K.	10
	9 5	N.NW.	2	K.	10
	10 5	-	-	-	-
	Noon.	N.NW.	3	N. K.	10
	2 5	N.NW.	3	K.	10
	3 5	-	-	-	-
	4 5	NW.	2	K.	10
	6 5	NW.	1	C. K.	4
	8 5	NW.	1	Clear.	0
	9 5	NW.	1	Clear.	0
	10 5	NW.	1	Clear.	0
Jan. 6	0 5	N.	1	Clear.	0
	2 5	N.	1	Clear.	0
	3 5	NW.	1	Clear.	0
	4 5	NW.	1	Clear.	0
	6 5	NW.	1	Clear.	0
	8 5	N. by E.	1	C. S.	4
	9 5	N.	1	C. S.	8
	10 5	E.	1	C. S.	8
	Noon.	E.	1	C. S.	4
	2 5	SE.	1	C.	1
	3 5	SE.	1	C.	1
	4 5	SE.	1	C. S.	3
	6 5	SW.	1	C. S.	3
	8 5	NW.	1	C. S.	4
	9 5	NW.	1	K.	10
	10 5	NW.	1	K.	10
Jan. 9	0 5	N NE.	1	K.	10
	2 5	N.	1	C. K.	10
	3 5	NE.	1	K.	10
	4 5	NE.	1	K.	10
	6 5	NE.	1	K.	10
	8 5	NE.	1	K.	10
	9 5	E.	1	N.	10
	10 5	NE.	2	N.	10
	Noon.	NE.	3	N.	10
	2 5	-	-	-	-
	3 5	NE.	2	K.	10
	4 5	N.	1	K.	10
	6 5	NW.	1	K.	10
	8 5	NW.	1	K.	10
	9 5	NW.	1	K.	10
	10 5	NW.	1	C.	4

REMARKS.

January 2. Commenced raining at 6 p. m.
3. Amount of rain yesterday and to-day, 1.100 inch.
7. Rain during the day, at intervals. Amount, 0.060 inch.
9. Commenced snowing at 7.50 a. m.; changed into rain at 9.30 a. m. Amount, 0.300 inch.

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Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.
1861. Jan. 10	h. m. 0 5	NW.	1	S.	1
	2 5	NW.	1	C.	2
	3 5	NW.	1	C. K.	4
	4 5	NW.	1	C. K.	4
	6 5	NW.	1	C. K.	8
	8 5	N.	1	K.	10
	9 5	W.	1	K.	10
	10 5	W.	1	K.	10
	Noon.	W.	1	C. K. S.	10
	2 5	-	-	-	-
	3 5	NW.	7	C. K.	6
	4 5	NW.	5	C. K.	4
	6 5	NW.	6	K. S.	9
	8 5	NW.	6	K. S.	3
	9 5	NW.	6	K. S.	3
	10 5	NW.	6	S.	1
1861. Jan. 11	h. m. 0 5	NW.	6	Clear.	0
	2 5	NW.	6	C.	1
	3 5	NW.	4	Clear.	0
	4 5	NW.	3	Clear.	0
	6 5	NW.	2	S.	1
	8 5	N.	2	C.	8
	9 5	N.	2	C.	10
	10 5	N.	2	C. K.	10
	Noon.	-	-	-	-
	2 5	S.	2	K.	10
	3 5	S.	1	K.	10
	4 5	S.	1	K.	10
	6 5	S. E.	1	N.	10
	8 5	E.	2	K.	10
	9 5	E.	1	K.	10
	10 5	E.	1	K.	10
1861. Jan. 12	h. m. 0 5	NE.	1	K.	10
	2 5	NE.	1	K.	10
	3 5	N.	1	K.	10
	4 5	N.	1	K.	10
	6 5	N.	1	K.	10
	8 5	NW.	1	C. K. S.	10
	9 5	W.SW.	1	C. K.	10
	10 5	SW.	1	C. K.	10
	Noon.	SE.	1	C. K.	6
	2 5	NW.	4	N.	9
	3 5	NW.	4	C. K.	4
	4 5	NW.	2	C. K.	9
	6 5	N.	4	C. K.	10
	8 5	N.	4	C. K.	10
	9 5	N.	4	C. K.	10
	10 5	N.	3	C.	2
Jan. 13	0 5	N.	3	S.	1
	2 5	N.	3	S.	1
	3 5	N.	2	Clear.	0
	4 5	N.	2	Clear.	0
	6 5	N.	1	Clear.	0
	8 5	N.	1	Clear.	0
	9 5	N.NE.	2	Clear.	0
	10 5	N.NE.	2	Clear.	0
	Noon.	E.NE.	1	Clear.	0
	2 5	NE.	1	Clear.	0
	3 5	E.	1	Clear.	0
	4 5	E. by S.	1	Clear.	0
	6 5	E.	2	C. S.	2
	8 5	E.	1	C. S.	3
	9 5	E.	1	C. K.	4
	10 5	NE.	1	C. K.	8
Jan. 14	0 5	NE.	1	K.	10
	2 5	NE.	2	K.	10
	3 5	NE.	1	K.	10
	4 5	NE.	1	K.	10
	6 5	NE.	2	K.	10
	8 5	NE.	2	N.	10
	9 5	NE.	1	N.	10
	10 5	NE.	1	N.	10
	Noon.	E.	1	N.	10
	2 5	-	-	-	-
	3 5	-	-	-	-
	4 5	NE.	1	N.	10
	6 5	NE.	1	N.	10
	8 5	N.	1	Mist.	10
	9 5	N.	1	N.	10
	10 5	N.	1	K.	10
Jan. 15	0 5	NW.	3	N.	10
	2 5	NW.	2	K.	10
	3 5	W.	1	K.	10
	4 5	SW.	2	K.	10
	6 5	SW.	1	N.	10
	8 5	W.	1	K.	10
	9 5	W.	1	K.	10
	10 5	SW.	1	K.	10
	Noon.	S.	1	K.	10
	2 5	-	-	-	-
	3 5	-	-	-	-
	4 5	E.	1	K., foggy	10
	6 5	NE.	1	K., foggy	10
	8 5	NE.	1	N., foggy	10
	9 5	NE.	1	K.	10
	10 5	NE.	1	K.	10
Jan. 16	0 5	NE.	2	K.	10
	2 5	NE.	1	Mist.	10
	3 5	NE.	1	N.	10
	4 5	NE.	1	N.	10
	6 5	NE.	1	N.	10
	8 5	NW.	1	Mist.	10
	9 5	NW.	1	Mist.	10
	10 5	NW.	1	Mist.	10
	Noon.	NW.	1	K.	10
	2 5	NW.	1	-	10
	3 5	NW.	1	K.	10
	4 5	N. by W.	1	K.	10
	6 5	NW.	1	K. S.	6
	8 5	NW.	1	K.	10
	9 5	NW.	1	K. S.	9
	10 5	NW.	1	K. S.	4
Jan. 17	0 5	NW.	5	K. S.	3
	2 5	NW.	2	K. S.	2
	3 5	NW.	1	S.	1
	4 5	NW.	1	S.	1
	6 5	NW.	1	C. S.	2
	8 5	NW.	2	C. K.	4
	9 5	NW.	3	C. K.	8
	10 5	NW.	3	C. K.	8
	Noon.	NW.	3	C. K.	9
	2 5	NW.	3	C. K.	9
	3 5	N.NW.	2	C. K.	10
	4 5	NW.	2	C. K.	9
	6 5	NW.	1	C. S.	6
	8 5	NW.	1	Clear.	0
	9 5	NW.	1	Clear.	0
	10 5	NW.	1	Clear.	0
Jan. 18	0 5	NW.	1	S.	1
	2 5	NW.	1	S.	1
	3 5	NW.	1	S.	4
	4 5	NW.	1	K.	6
	6 5	NW.	1	K.	10
	8 5	SW.	1	K.	10
	9 5	-	-	-	-
	10 5	NE.	1	N.	10
	Noon.	NE.	1	N.	10
	2 5	E.	1	K.	10
	3 5	SE.	1	K.	10
	4 5	S.SE.	1	K.	10
	6 5	SW.	1	K.	10
	8 5	SW.	1	K.	10
	9 5	W.	1	K.	10
	10 5	W.	1	K.	10

REMARKS.

January 11. Slight fall of snow at 5 p. m.
12. Slight fall of snow between 10 a. m. and noon.
14. Commenced snowing at 6 a. m. 1½ foot deep.
15. Slight fall of snow at 1 a. m. Amount gauged, 0.500 inch.
16. Commenced raining at 2.30 a. m. Amount gauged, 0.150 inch.
18. Rain and hail at intervals. Began at 9.30 a.m. Amount, 0.290 inch.

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Day.	Hour.	Wind. Direction.	Wind. Force.	Weather	Portion cloudy.	Day.	Hour	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.	Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.
1861.	h. m.					1861	h. m.					1861.	h. m.				
Jan. 19	0 5	SW.	1	K.	10	Jan. 20	0 5	NW.	3	C.	8	Jan. 21	0 5	NW.	1	C.	1
	2 5	SW.	1	K.	10		2 5	NW.	4	C.	2		2 5	NW.	1	Clear.	0
	3 5	W.	1	K.	10		3 5	NW.	4	C. S.	3		3 5	NW.	1	Clear.	0
	4 5	NW.	1	C. K.	6		4 5	NW.	4	C. S.	2		4 5	NW.	1	S.	1
	6 5	NW.	1	C. K.	6		6 5	W.	4	C. S.	2		6 5	SW.	1	C. S.	2
	8 5	W.	1	C. S.	4		8 5	W.	4	C. K. S.	6		8 5	W.	1	C. S.	6
	9 5	-	-	-	-		9 5	W.NW.	4	C. S.	4		9 5	W.	1	C.	7
	10 5	S. by W.	1	C. K.	4		10 5	-	-	-	-		10 5	-	-	-	-
	Noon.	S.	1	C. K.	6		Noon.	W.	6	Clear.	0		Noon.	NW.	4	C.	6
	2 5	S.	1	C. K.	7		2 5	W.NW.	7	S.	1		2 5	-	-	-	-
	3 5	S SE.	1	C.	3		3 5	W.NW.	6	S.	1		3 5	NW.	3	C.	8
	4 5	S.	1	C. S.	2		4 5	W.NW.	5	C.	1		4 5	NW.	3	C.	6
	6 5	NW.	1	C. S.	2		6 5	W.NW.	3	C. S.	1		6 5	N.	1	C. K.	9
	8 5	NW.	1	C. S.	3		8 5	W.NW.	1	Clear.	0		8 5	N.	1	C.	1
	9 5	NW.	1	C. S.	6		9 5	W.NW.	1	C.	1		9 5	N.	1	C.	2
	10 5	W.NW.	2	C. K.	8		10 5	W.NW.	1	C.	1		10 5	N.	1	C.	1
Jan. 22	0 5	NW.	1	S.	1	Jan. 23	0 5	NW.	1	C. K.	8	Jan. 24	0 5	NE.	3	N.	10
	2 5	NW.	1	S.	1		2 5	NW.	1	C. K.	8		2 5	NE.	4	N.	10
	3 5	NW.	1	Clear.	0		3 5	N.	1	C. K.	6		3 5	NE.	4	N.	10
	4 5	NW.	1	Clear.	0		4 5	N.	1	C. K.	4		4 5	NE.	4	N.	10
	6 5	NW.	1	C. S.	3		6 5	N.	1	C.	4		6 5	NE.	3	N.	10
	8 5	N. by W.	1	C. S.	1		8 5	N.NE.	1	K.	10		8 5	NE.	2	N.	10
	9 5	N.NW.	1	Clear.	0		9 5	N.NE.	2	K.	10		9 5	NE.	4	N.	10
	10 5	-	-	-	-		10 5	N. by E.	2	K.	10		10 5	NE.	4	N.	10
	Noon.	N.	1	Clear.	0		Noon.	E.SE.	2	K.	10		Noon.	NE.	2	N.	10
	2 5	N.	1	Clear.	0		2 5	-	-	-	-		2 5	NE.	1	N.	10
	3 5	NW.	2	C.	1		3 5	E.	1	K.	10		3 5	W.	1	N.	10
	4 5	NW.	2	C.	3		4 5	E.	1	K.	10		4 5	NW.	2	N.	10
	6 5	N.	1	C. S.	2		6 5	NE.	1	K.	10		6 5	NW.	2	K.	10
	8 5	N.	1	C. S.	1		8 5	NE.	2	K.	10		8 5	NW.	1	K.	10
	9 5	N.	1	C.	1		9 5	-	-	-	-		9 5	NW.	2	K.	10
	10 5	N.	1	C.	1		10 5	NE.	2	K.	10		10 5	NW.	1	K.	10
Jan. 25	0 5	NW.	1	C. S.	3	Jan. 26	0 5	N.NW.	1	C. K.	10	Jan. 27	0 5	NW.	1	K.	10
	2 5	NW.	1	S.	1		2 5	N.	1	C. K.	10		2 5	NW.	1	C. K.	8
	3 5	NW.	1	Clear.	0		3 5	N.	1	C. K.	10		3 5	NW.	1	C. K.	4
	4 5	W.	1	C.	4		4 5	N.	1	C. K.	10		4 5	NW.	1	C. S.	3
	6 5	W.	1	K.	10		6 5	NE.	3	K.	10		6 5	NW.	1	C. S.	2
	8 5	SW.	1	K.	10		8 5	NE.	2	K.	10		8 5	NW.	1	Clear.	0
	9 5	SW.	1	K.	10		9 5	NE.	1	N.	10		9 5	NW.	1	Clear.	0
	10 5	SW.	1	K.	10		10 5	NE.	2	N.	10		10 5	NW.	1	Clear.	0
	Noon.	NW.	1	C. K.	10		Noon.	N NE.	2	N.	10		Noon.	S. by E.	1	Clear.	0
	2 5	-	-	-	-		2 5	NE.	1	N.	10		2 5	S.	1	C.	1
	3 5	SW.	1	C. K.	10		3 5	N.	1	N.	10		3 5	S.	1	C.	1
	4 5	NW.	1	C. K.	10		4 5	N. by W.	1	N.	10		4 5	S. by E.	1	C.	1
	6 5	NW.	1	K.	10		6 5	N.	2	N.	10		6 5	S.	1	S.	1
	8 5	NW.	1	K.	10		8 5	N.	2	K.	10		8 5	S.	1	C. S.	1
	9 5	NW.	1	K.	10		9 5	N.	2	K.	10		9 5	SE.	1	Clear.	0
	10 5	NW.	1	K.	10		10 5	N.	1	K.	10		10 5	SE.	1	Clear.	0

REMARKS.

January 23. Barometer unusually high to-day. Slight snow at 10. 30 p. m.
24. Snow and rain at intervals during the day. Amount, 1. 130 inch. Halo around the moon.
26. Began to snow at 8. 45 a. m.; 5½ inches deep. Amount gauged, 0. 400 inch.

Hosted by Google

Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.
1861. Jan. 28	h. m.				
	0 5	S.	1	C. K.	6
	2 5	S.	1	C. K.	9
	3 5	S.	1	C. K.	8
	4 5	SW.	1	C. K.	8
	6 5	NW.	2	C. K.	4
	8 5	NW.	1	C. K.	6
	9 5	NW.	1	C. K.	4
	10 5	NW.	5	C. K.	4
	Noon.	W.	5	S.	1
	2 5	W.NW.	4	S.	1
	3 5	W.	3	C. S.	2
	4 5	NW.	2	C. S.	4
	6 5	SW.	1	C. K. S.	8
	8 5	SW.	1	C. K. S.	4
	9 5	N.	1	C. K. S.	4
	10 5	N.	1	C. K. S.	6
Jan. 31	0 5	NW.	3	Clear.	0
	2 5	NW.	2	Clear.	0
	3 5	NW.	2	Clear.	0
	4 5	NW.	2	Clear.	0
	6 5	NW.	1	S.	1
	8 5	NW.	1	C. S.	8
	9 5	NW.	2	C. K.	6
	10 5	NW.	2	C.	1
	Noon.	W.	2	Clear.	0
	2 5	-	-	-	-
	3 5	SW.	2	C.	1
	4 5	W.	1	C. K.	2
	6 5	S.	1	C. S.	2
	8 5	SW.	1	S.	1
	9 5	NW.	1	Clear.	0
	10 5	NW.	1	Clear.	0
Feb. 1	0 5	NW.	1	Clear.	0
	2 5	NW.	1	Clear.	0
	3 5	NW.	1	Clear.	0
	4 5	NW.	1	C. K.	6
	6 5	NW.	1	C. K. S.	10
	8 5	NW.	1	C. K. S.	10
	9 5	N.	1	K.	10
	10 5	N.	1	K.	10
	Noon.	NE.	1	N.	10
	2 5	NE.	1	N.	10
	3 5	NE.	1	N.	10
	4 5	NE.	1	K.	10
	6 5	NE.	1	N.	10
	8 5	NE.	1	N.	10
	9 5	NE.	1	N.	10
	10 5	NE.	1	N.	10

Day.	Hour.	Wind. Direction.	Wind. Force.	Weather	Portion cloudy.
1861. Jan. 29	h. m.				
	0 5	SE.	1	C. K.	10
	2 5	SE.	1	C. K.	10
	3 5	SE.	1	K.	10
	4 5	SE.	1	K.	10
	6 5	SE.	1	K.	10
	8 5	S.	1	K.	10
	9 5	SE.	1	K.	10
	10 5	S.	1	K.	10
	Noon.	S. by E.	1	C. K.	6
	2 5	S.	1	C.	1
	3 5	S by E.	1	C.	2
	4 5	S.	1	Clear.	0
	6 5	S.	1	S.	1
	8 5	S.	2	Clear.	0
	9 5	S.	1	Clear.	0
	10 5	S.	2	S.	1
Feb. 2	0 5	N. E.	1	N.	10
	2 5	E.	1	N.	10
	3 5	SE.	1	N.	10
	4 5	SE.	1	N.	10
	6 5	SE.	1	N.	10
	8 5	S.	1	N.	10
	9 5	S.	1	N.	10
	10 5	S.	1	N.	10
	Noon.	S. by E.	1	N.	10
	2 5	-	-	-	-
	3 5	S.	1	K.	10
	4 5	S.	1	K.	10
	6 5	-	-	-	-
	8 5	W.	1	K.	10
	9 5	W.	1	K.	10
	10 5	NW.	1	K.	10

Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.
1861. Jan. 30	h. m.				
	0 5	S. by E.	3	C. S.	2
	2 5	SW.	4	C. S.	9
	3 5	W.	4	C. S.	9
	4 5	NW.	2	C. S.	5
	6 5	NW.	3	Clear.	0
	8 5	NW.	5	C.	1
	9 5	NW.	6	S.	1
	10 5	NW.	6	S.	1
	Noon.	NW.	6	Clear.	0
	2 5	NW.	4	Clear.	0
	3 5	NW.	4	Clear.	0
	4 5	NW.	3	Clear.	0
	6 5	W.NW.	1	C.	1
	8 5	W NW.	1	Clear.	0
	9 5	W.NW.	1	Clear.	0
	10 5	NW.	3	Clear.	0
Feb. 3	0 5	NW.	1	K.	10
	2 5	N.	1	K.	10
	3 5	NW.	2	K.	10
	4 5	NW.	2	K.	10
	6 5	NW.	2	K.	10
	8 5	NW.	1	C. K.	10
	9 5	NW.	2	C. K. S.	10
	10 5	NW.	2	C. K. S.	10
	Noon.	NW.	2	C. K. S.	10
	2 5	NW.	2	C. K. S.	9
	3 5	N.	1	C. K. S.	10
	4 5	N.	1	C. K. S.	10
	6 5	N. by E.	1	C. K. S.	10
	8 5	N.	1	K.	10
	9 5	NE.	2	K.	10
	10 5	NE.	2	K.	10

REMARKS.

February 1. Began raining at 10. 45 a. m.
2. Rained until noon.

Hosted by Google

Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.
1861.	h. m				
Feb. 4	0 5	NE.	1	K.	10
	2 5	NE.	1	K.	10
	3 5	NE.	1	N.	10
	4 5	NE.	1	N.	10
	6 5	NE	1	N.	10
	8 5	N.	1	N.	10
	9 5	N.	1	K.	10
	10 5	N.	1	K.	10
	Noon.	N.	1	C. K.	9
	2 5	SE.	3	C. K.	7
	3 5	SE.	1	C. K.	2
	4 5	S. by E.	1	Clear.	0
	6 5	S. by W.	1	Clear.	0
	8 5	W.	1	Clear.	0
	9 5	W.	1	Clear.	0
	10 5	W.	1	Clear.	0
Feb. 7	0 5	S.	3	C.	2
	2 5	S.	1	C.	1
	3 5	S.	1	C.	1
	4 5	S.	1	C.	2
	6 5	S. by W.	3	C. K.	6
	8 5	S. by W.	4	C. K.	8
	9 5	S. by W.	5	C. S.	4
	10 5	S. by W.	4	C. S.	3
	Noon.	SW.	10	K.	9
	2 5	NW.	10	C. S.	3
	3 5	NW.	9	C. K.	3
	4 5	NW.	9	S.	1
	6 5	NW.	9	S.	1
	8 5	NW.	9	Clear.	0
	9 5	NW.	9	Clear.	0
	10 5	NW.	8	Clear.	0
Feb. 10	0 5	Calm.	0	K.	10
	2 5	Calm.	0	K.	10
	3 5	Calm.	0	K.	10
	4 5	Calm.	0	K.	10
	6 5	W.	1	K.	10
	8 5	NE.	1	K.	10
	9 5	E.	1	K.	10
	10 5	SE.	1	K.	10
	Noon.	SE.	1	C. K.	10
	2 5	SE.	1	C. K.	10
	3 5	S. by E.	1	C. K.	10
	4 5	S. by E.	1	C. K.	9
	6 5	E.	1	C. K.	6
	8 5	E.	1	C. K.	7
	9 5	E.	1	C. K.	6
	10 5	E.	1	C. K.	5

Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.
1861.	h. m.				
Feb. 5	0 5	Calm.	0	Clear.	0
	2 5	SW.	1	Clear.	0
	3 5	SW.	1	Clear.	0
	4 5	SW.	1	Foggy.	10
	6 5	W.	1	Foggy.	10
	8 5	W. NW.	1	Foggy.	10
	9 5	NW.	1	Foggy.	10
	10 5	W.	1	Foggy.	10
	Noon.	NW.	1	K.	10
	2 5	W.	1	K.	10
	3 5	S by E	1	K.	10
	4 5	S.	1	K.	10
	6 5	SW.	1	K.	10
	8 5	NW.	1	Clear.	0
	9 5	NW.	1	Clear.	0
	10 5	NW.	1	Clear.	0
Feb. 8	0 5	NW.	8	Clear.	0
	2 5	NW.	3	Clear.	0
	3 5	NW.	3	Clear.	0
	4 5	NW.	4	Clear.	0
	6 5	NW.	4	S.	1
	8 5	N. NW.	4	Clear.	0
	9 5	N. NW.	4	Clear.	0
	10 5	N. NW.	4	S.	1
	Noon.	N. NW.	3	C. K.	9
	2 5	S. E.	2	C. S.	3
	3 5	E.	1	C. K.	9
	4 5	S.	2	C. K.	10
	6 5	SE	2	C. S.	2
	8 5	E.	2	S.	1
	9 5	S.	2	S.	1
	10 5	S.	2	S.	1
Feb. 11	0 5	S.	2	C. K.	4
	2 5	S.	1	C.	2
	3 5	S.	1	C.	6
	4 5	S.	1	C.	10
	6 5	S.	1	C. K.	10
	8 5	SE.	1	K.	10
	9 5	E.	1	C. K.	10
	10 5	SE.	2	C. K.	10
	Noon.	S. by E	3	C. K.	10
	2 5	S.	4	C. K.	9
	3 5	-	-	-	-
	4 5	S.	3	C. K.	10
	6 5	S. SE.	2	C. K.	10
	8 5	SE.	2	K.	10
	9 5	SE.	2	K.	10
	10 5	SE.	1	K.	10

Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.
1861.	h. m.				
Feb. 6	0 5	SE.	1	K.	10
	2 5	SW.	1	K.	10
	3 5	W.	1	K.	10
	4 5	NW.	1	C. K.	6
	6 5	NW.	1	C. S.	4
	8 5	SW.	1	Clear.	0
	9 5	SW.	4	Clear.	0
	10 5	-	-	-	-
	Noon.	W.	3	Clear.	0
	2 5	-	-	-	-
	3 5	-	-	-	-
	4 5	S. by W.	4	C. S.	2
	6 5	S.	4	S.	1
	8 5	S.	4	Clear.	0
	9 5	S.	3	Clear.	0
	10 5	S.	4	Clear.	0
Feb. 9	0 5	SE.	1	S.	2
	2 5	SE.	2	C. S.	4
	3 5	SE.	1	C. S.	3
	4 5	E.	1	S.	2
	6 5	E.	1	C. K.	6
	8 5	E.	1	C. K.	8
	9 5	E.	1	C. K.	10
	10 5	E. SE.	1	C. K.	10
	Noon.	E.	1	C. K.	10
	2 5	S.	1	C. K.	8
	3 5	S.	1	C. K.	10
	4 5	S.	1	C. K.	8
	6 5	NE.	1	K.	10
	8 5	E.	1	C. K.	6
	9 5	E.	1	K.	10
	10 5	E.	1	K.	10
Feb. 12	0 5	E.	2	N.	10
	2 5	SE.	2	N.	10
	3 5	S.	2	N.	10
	4 5	SW.	1	N.	10
	6 5	NW.	1	N.	10
	8 5	NW.	1	K.	4
	9 5	NW.	1	C. K.	2
	10 5	SE.	1	C. K.	1
	Noon.	SW.	1	C. K.	5
	2 5	W. SW.	4	C. K.	5
	3 5	W. SW.	4	C. K.	4
	4 5	W. SW.	4	C.	1
	6 5	NW.	1	Clear.	0
	8 5	W.	1	Clear.	0
	9 5	W.	1	Clear.	0
	10 5	W.	1	Clear.	0

REMARKS.

February 4. Began snowing at 2 30 a. m.; 2½ inches deep. Amount gauged, 0.200 inch.
7. At 12.30 p. m. barometer 29.282, among the lowest altitudes observed at this institution. Wind changed from SW. to W., with light rain. Suddenly blew a heavy gale from NW. until midnight.
10. Slight shower at 7 a. m.
11. Slight showers at 4 and 9 30 p. m.
12. Raining from preceding midnight. Amount gauged, 0. 630 inch.

Hosted by Google

Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.
1861. Feb. 13	h. m.				
	0 5	W.	1	Clear.	0
	2 5	W.	1	Clear.	0
	3 5	W.	1	C.	1
	4 5	W.	1	C.	2
	6 5	W.	1	C. S.	3
	8 5	NW.	1	C. K. S.	6
	9 5	-	-	-	-
	10 5	W. SW.	1	C. S.	4
	Noon	W.	1	C. K.	8
	2 5	W.	1	C. K.	7
	3 5	W.	1	C. K.	10
	4 5	SW.	1	C. K.	8
	6 5	S.	1	C. K. S.	5
	8 5	SW.	1	S.	1
	9 5	NW.	1	C.	1
	10 5	NW.	1	Clear.	0
Feb. 16	0 5	NW.	1	S.	1
	2 5	NW.	1	Clear.	0
	3 5	NW.	1	Clear.	0
	4 5	NW.	1	Clear.	0
	6 5	S.	1	Clear.	0
	8 5	E.	1	C. K.	8
	9 5	NE.	1	C. K.	8
	10 5	-	-	-	-
	Noon.	SE.	1	C. K.	6
	2 5	E. SE.	3	C. K.	8
	3 5	E. SE.	4	C. K.	10
	4 5	SE.	4	K.	10
	6 5	E.	5	K.	10
	8 5	SW.	1	K.	10
	9 5	S.	1	C.	2
	10 5	SW.	3	C. K.	6
Feb. 19	0 5	NW.	4	C. K.	6
	2 5	NW.	3	C. K.	4
	3 5	NW.	2	C. K.	4
	4 5	NW.	2	C. K.	3
	6 5	NW.	1	C. K. S.	3
	8 5	NW.	1	C. K.	8
	9 5	SW.	1	C. K.	9
	10 5	S.	1	C. K.	8
	Noon.	S.	2	C. K.	9
	2 5	S.	3	K.	10
	3 5	S.	3	K.	10
	4 5	SE.	2	K.	10
	6 5	S. by W.	2	K.	10
	8 5	S.	1	K.	10
	9 5	S.	3	K.	10
	10 5	N.	2	N.	10

Day.	Hour.	Wind. Direction.	Wind. Force.	Weather	Portion cloudy.
1861. Feb. 14	h. m.				
	0 5	NW.	1	Clear.	0
	2 5	N.	1	C.	2
	3 5	N.	1	S.	1
	4 5	NE.	1	Clear.	0
	6 5	NE	1	C. S.	1
	8 5	NE.	1	C. K.	8
	9 5	NE.	2	C K.	9
	10 5	NE.	2	C. K.	10
	Noon.	NE.	3	C. K.	10
	2 5	NE.	3	N.	10
	3 5	NE.	3	C. K.	10
	4 5	NE.	4	C. K.	10
	6 5	NE.	4	K.	10
	8 5	NE.	4	N.	10
	9 5	NE	3	N.	10
	10 5	NE.	3	N.	10
Feb. 17	0 5	SW.	4	C. K.	8
	2 5	W.	3	Clear.	0
	3 5	W.	3	Clear.	0
	4 5	W.	4	S.	1
	6 5	W.	3	S.	1
	8 5	SW.	3	C. S.	1
	9 5	W.	2	K. S.	4
	10 5	W.	2	C. K.	7
	Noon.	W.	2	N.	10
	2 5	W. NW.	3	N.	10
	3 5	W.	2	K.	10
	4 5	NW.	1	K.	10
	6 5	NW.	1	K.	10
	8 5	NW.	1	K.	10
	9 5	NW.	2	C.	1
	10 5	NW.	2	C.	2
Feb. 20	0 5	S. by E.	1	N.	10
	2 5	S. by E.	1	N.	10
	3 5	E.	1	N.	10
	4 5	S. E.	1	K.	10
	6 5	S.	1	K.	10
	8 5	S. W.	1	K.	10
	9 5	S. W.	1	C. K.	10
	10 5	W.	3	C. K.	4
	Noon.	W.	8	C. K.	3
	2 5	NW.	6	C. K.	3
	3 5	NW.	6	C. K.	4
	4 5	NW.	6	C. K.	3
	6 5	W.	4	C. S.	4
	8 5	W.	3	C.	2
	9 5	W.	2	C. K.	8
	10 5	W.	1	C. K.	4

Day.	Hour.	Wind. Direction	Wind. Force.	Weather.	Portion cloudy.
1861. Feb. 15	h. m.				
	0 5	NE.	2	N.	10
	2 5	NE.	1	K.	10
	3 5	NE.	1	K.	10
	4 5	NE.	1	K.	10
	6 5	NE.	1	K.	10
	8 5	NE.	1	K.	10
	9 5	NE	1	K.	10
	10 5	NE.	1	K.	10
	Noon.	W. NW.	3	N.	10
	2 5	SW.	1	N.	10
	3 5	SW.	1	K.	9
	4 5	S.	1	N.	10
	6 5	W. NW.	1	K. S.	10
	8 5	NW.	1	S.	1
	9 5	NW.	1	K. S.	1
	10 5	NW.	1	S.	1
Feb. 18	0 5	NW.	2	C. K.	6
	2 5	NW.	1	K.	10
	3 5	NW.	1	K.	8
	4 5	NW.	1	C. S.	4
	6 5	NW.	1	C. S.	3
	8 5	NW.	2	C. K. S.	9
	9 5	NW.	3	C. S.	9
	10 5	NW.	4	C. K.	3
	Noon.	W.	3	C. K.	10
	2 5	NW.	4	C. K.	10
	3 5	NW.	4	C. K.	10
	4 5	NW.	4	C. K.	6
	6 5	NW.	4	C. K.	10
	8 5	NW.	6	C.	4
	9 5	NW.	5	C.	4
	10 5	NW.	2	C.	2
Feb. 21	0 5	SW.	3	C. S.	2
	2 5	SW.	3	C. S.	3
	3 5	SW.	4	C. K.	4
	4 5	W.	4	C. K. S.	4
	6 5	W.	4	C. K. S.	5
	8 5	NW.	4	C. S.	1
	9 5	W. NW.	6	C. K.	3
	10 5	W. NW.	6	C. K.	4
	Noon.	W. NW.	9	C. K.	4
	2 5	-	-	-	-
	3 5	W.	7	C.	3
	4 5	W.	7	C.	2
	6 5	NW.	3	K. S.	1
	8 5	NW.	3	Clear.	0
	9 5	NW.	1	Clear.	0
	10 5	NW.	1	Clear.	0

REMARKS.

February 14. Began raining at 2 p. m.

15. At 11.30 a. m. barometer 29.391; at 11.40 raining, wind W.; 11.45 heavy shower, with lightning and thunder; for several minutes large hail stones fell. Amount of rain yesterday and to-day, 0.510 inch.

16. At 6.30 p. m. began to rain, wind SE.; at 7.20 wind SW., heavy rain, hail, lightning, and thunder. Amount of rain, 0.250 inch.

17. Snowing at noon.

19. Snowing at 10 p. m.

Hosted by Google

Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.
1861. Feb. 22	h. m				
	0 5	NW.	1	Clear.	0
	2 5	NW.	1	Clear.	0
	3 5	NW.	1	Clear.	0
	4 5	W.	1	Clear.	0
	6 5	W.	1	Clear.	0
	8 5	W.SW.	1	C.	5
	9 5	W.	1	C.	4
	10 5	SE.	1	C.	9
	Noon.	W.	2	C. K.	10
	2 5	S	1	C. K.	10
	3 5	-	-	-	-
	4 5	S.	1	C. K.	10
	6 5	S.	1	C. K.	10
	8 5	S.	1	C. K.	10
	9 5	S.	1	C. K.	9
	10 5	S.	1	C.	2
Feb. 25	0 5	NW.	4	Clear.	0
	2 5	NW.	3	Clear.	0
	3 5	NW.	2	Clear.	0
	4 5	NW.	2	Clear.	0
	6 5	NW.	2	Clear.	0
	8 5	NW.	2	Clear.	0
	9 5	N.	1	Clear.	0
	10 5	E.	1	C.	1
	Noon.	SE.	1	C. S.	2
	2 5	S.	3	C. S.	3
	3 5	S.	3	S.	1
	4 5	S.	3	S.	1
	6 5	S.	1	C. S.	1
	8 5	S.	1	C. S.	1
	9 5	S.	1	C.	1
	10 5	S.	1	Clear.	0
Feb. 28	0 5	NW.	3	Clear.	0
	2 5	NW.	1	C.	3
	3 5	NW.	2	C.	3
	4 5	NW.	2	C.	4
	6 5	NW.	2	C.	1
	8 5	NW.	2	Hazy.	0
	9 5	W.	1	Hazy.	0
	10 5	SW.	1	Hazy.	0
	Noon.	NW.	1	C.	1
	2 5	-	-	-	-
	3 5	NW.	2	C. K.	2
	4 5	NW.	2	C. K.	8
	6 5	S.	2	C. S.	2
	8 5	SW.	1	C.	1
	9 5	SW.	1	S.	1
	10 5	SE.	1	Clear.	0

Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.
1861. Feb. 23	h. m				
	0 5	S.	1	C. K.	6
	2 5	S.	1	C. K.	8
	3 5	S.	1	C. K.	8
	4 5	S.	1	C. K.	6
	6 5	SE.	1	C. K.	10
	8 5	S. by E.	1	C. K.	10
	9 5	S.	1	C. K.	10
	10 5	S.	1	C. K.	8
	Noon.	-	-	-	-
	2 5	S.SW.	4	C. K.	9
	3 5	S.SW.	5	N.	10
	4 5	S.	5	K.	10
	6 5	S.	5	C. K. N.	10
	8 5	S.	5	K.	10
	9 5	S.	5	K.	10
	10 5	S.	4	K.	10
Feb 26	0 5	S.	1	C.	4
	2 5	S.	1	C. K.	6
	3 5	S.	1	C. K.	8
	4 5	S.	1	C. K.	10
	6 5	S.	1	C. K.	9
	8 5	S.	1	C. K.	10
	9 5	S.	1	C. K.	10
	10 5	-	-	-	-
	Noon.	S.SE.	2	C. K.	10
	2 5	-	-	-	-
	3 5	S.SE.	1	C. K.	10
	4 5	S.SE.	1	C. K.	10
	6 5	S.	1	C. K.	10
	8 5	N.	1	C. K.	6
	9 5	NE.	1	C. K.	6
	10 5	E.	1	C. K.	4

Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.
1861. Feb. 24	h. m				
	0 5	S.	4	K.	10
	2 5	SW.	4	K.	10
	3 5	W.	4	K.	10
	4 5	NW.	4	K.	10
	6 5	NW.	6	K.	10
	8 5	NW.	6	C K. S.	9
	9 5	NW.	4	C. K. S.	3
	10 5	NW.	6	C. K. S.	3
	Noon.	NW.	6	C. K.	4
	2 5	NW.	6	C. K.	5
	3 5	NW.	6	C. K.	3
	4 5	NW.	7	C.	2
	6 5	NW.	6	Clear.	0
	8 5	NW.	5	Clear.	0
	9 5	NW.	4	Clear.	0
	10 5	NW.	4	Clear.	0
Feb. 27	0 5	NE.	1	C. K.	8
	2 5	N.	1	C. K.	10
	3 5	N.	1	C. K.	10
	4 5	N.	1	C. K.	10
	6 5	NW.	1	C. K. S.	4
	8 5	NW.	1	C. K. S.	4
	9 5	NW.	1	C.	2
	10 5	NW.	1	C.	1
	Noon.	Calm.	0	C.	1
	2 5	SE.	1	C.	1
	3 5	-	-	-	-
	4 5	SE.	1	C.	1
	6 5	S.SE.	1	C.	1
	8 5	S.	1	C. S.	3
	9 5	S.	1	C. S.	2
	10 5	W.	1	C.	1

REMARKS.

February 23. Began raining at 2.40 p. m. Amount of rain, 0.250 inch.

Hosted by Google

Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.
1861.	h. m.				
Mar. 1	0 5	N.	1	C. K.	4
	2 5	SE.	1	C. K.	4
	3 5	SE.	1	C. K.	3
	4 5	SE.	1	C.	1
	6 5	SE.	1	C. S.	2
	8 5	S.	1	C. K.	4
	9 5	W.	1	C.	1
	10 5	SW.	3	C. K.	4
	Noon.	W.	6	C. K.	5
	2 5	W. NW.	4	C.	1
	3 5	W. NW.	4	S.	1
	4 5	W. NW.	4	C.	1
	6 5	W.	1	C. K. S.	6
	8 5	NW.	1	C. S.	2
	9 5	NW.	1	C.	1
	10 5	NW.	1	C.	1
Mar. 4	0 5	S.	4	K.	10
	2 5	W.	7	K.	10
	3 5	W.	6	K.	10
	4 5	W.	4	K.	10
	6 5	SW.	1	N.	10
	8 5	N. NW.	3	C. K. S. N.	10
	9 5	N. NW.	4	C. K. S.	9
	10 5	NW.	4	C. K. S.	9
	Noon.	-	-	-	-
	2 5	-	-	-	-
	3 5	-	-	-	-
	4 5	-	-	-	-
	6 5	NW.	2	C. S.	4
	8 5	NW.	1	C. S.	4
	9 5	NW.	4	C. S.	3
	10 5	NW.	3	C. S.	2
Mar. 7	0 5	NW.	6	C. K.	8
	2 5	NW.	3	C. K.	6
	3 5	NW.	3	C. K.	2
	4 5	NW.	3	C. K.	1
	6 5	NW.	4	S.	1
	8 5	N. NW.	3	Clear.	0
	9 5	NW.	4	Clear.	0
	10 5	NW.	4	Clear.	0
	Noon.	N.	4	Clear.	0
	2 5	NW.	3	Clear.	0
	3 5	NW.	3	Clear.	0
	4 5	NW.	2	Clear.	0
	6 5	NW.	2	Clear.	0
	8 5	NE.	1	Clear.	0
	9 5	NE.	1	Clear.	0
	10 5	NE.	1	Clear.	0

Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.
1861.	h. m.				
Mar. 2	0 5	NW.	1	C.	2
	2 5	Calm.	0	C. S.	3
	3 5	Calm.	0	C. S.	4
	4 5	SE.	1	C. S.	5
	6 5	NW.	1	C. K.	10
	8 5	SE.	1	C. K.	8
	9 5	SE.	1	C. K.	6
	10 5	-	-	-	-
	Noon.	S.	1	C. K.	4
	2 5	SW.	3	C. K.	4
	3 5	S. by E.	2	C. K.	4
	4 5	S.	2	C.	3
	6 5	S. by W.	1	C.	1
	8 5	W.	1	Clear.	0
	9 5	-	-	-	-
	10 5	C.	1	C.	1
Mar. 5	0 5	NW.	2	C. K.	4
	2 5	NW.	1	Clear.	0
	3 5	NW.	1	Clear.	0
	4 5	NW.	1	C. S.	1
	6 5	NW.	1	C. S.	1
	8 5	NW.	2	C. K.	4
	9 5	NW.	4	C. K.	9
	10 5	NW.	4	C. K.	10
	Noon.	N. NW.	6	C. K.	8
	2 5	NW.	5	C. K.	4
	3 5	NW.	7	C.	2
	4 5	NW.	5	C. K.	4
	6 5	NW.	5	C. S.	1
	8 5	NW.	5	Clear.	0
	9 5	NW.	4	Clear.	0
	10 5	NW.	4	Clear.	0
Mar. 8	0 5	NE.	1	C.	1
	2 5	NE.	1	C. K.	4
	3 5	NE.	1	C. K.	6
	4 5	NE.	1	C. K.	8
	6 5	E.	2	K.	10
	8 5	E.	2	C. S.	6
	9 5	SE.	2	C.	10
	10 5	-	-	-	-
	Noon.	SE.	3	C. K.	10
	2 5	-	-	-	-
	3 5	S. SE.	3	C. K.	10
	4 5	SE.	4	K.	10
	6 5	SE.	3	C. K.	9
	8 5	SE.	2	N.	10
	9 5	SE.	1	N.	10
	10 5	SE.	1	C. K.	7

Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.
1861	h. m.				
Mar. 3	0 5	SE.	1	C.	2
	2 5	E.	1	C. K.	7
	3 5	SE.	1	C. K.	6
	4 5	S.	1	C. K.	4
	6 5	S.	1	C. K.	3
	8 5	S. by E.	1	C.	3
	9 5	SE.	1	C. S.	3
	10 5	SE.	1	C. S.	2
	Noon.	S.	4	C. K.	6
	2 5	S.	4	C. K.	4
	3 5	S.	4	C. K.	4
	4 5	S.	5	C. K.	4
	6 5	S.	4	C. K.	2
	8 5	S.	4	C.	1
	9 5	S.	4	Clear.	0
	10 5	S.	4	Clear.	0
Mar. 6	0 5	NW.	4	Clear.	0
	2 5	NW.	3	C.	1
	3 5	NW.	2	C.	1
	4 5	W.	1	C.	1
	6 5	SW.	2	Clear.	0
	8 5	S.	3	Clear.	0
	9 5	SW.	3	Clear.	0
	10 5	SW.	3	Clear.	0
	Noon.	SW.	4	C.	3
	2 5	W.	3	C. K.	10
	3 5	-	-	-	-
	4 5	W.	3	C. K.	9
	6 5	NW.	2	C. K.	10
	8 5	W.	1	K.	10
	9 5	W.	1	K.	10
	10 5	W.	2	K.	10
Mar. 9	0 5	S.	4	C.	9
	2 5	SE.	4	N.	10
	3 5	SE.	6	K.	10
	4 5	SE.	6	N.	10
	6 5	S.	6	K.	10
	8 5	SE.	4	N.	10
	9 5	SE.	2	N.	10
	10 5	NW.	4	N.	10
	Noon.	NW.	3	N.	10
	2 5	NW.	5	K.	10
	3 5	NW.	6	K.	10
	4 5	NW.	6	C. K.	9
	6 5	NW.	4	S.	1
	8 5	NW.	1	S.	1
	9 5	NW.	1	S.	1
	10 5	NW.	1	S.	2

REMARKS.

March 4. At 12. 25 a. m. wind changed to W.; blew a heavy gale, with a few drops of rain.
8. Raining slightly at 8 p. m.
9. Raining at 1. 30 a. m. Amount of rain, 1. 270 inch. An aurora borealis from sunset till 10 p. m.

Hosted by Google

Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.	Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.	Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.
1861.	h. m					1861.	h. m					1861.	h. m				
Mar. 10	0 5	E.	1	C. K.	10	Mar. 11	0 5	NW.	2	C.	2	Mar. 12	0 5	S.	1	Clear.	0
	2 5	NE.	1	C. K.	9		2 5	NW.	2	C. S.	2		2 5	S.	2	C.	2
	3 5	N.	2	C. K.	10		3 5	NW.	2	S.	2		3 5	S. by W.	2	C. K.	4
	4 5	NW.	4	C. S.	8		4 5	NW.	2	S.	2		4 5	S. by W.	2	C. K.	8
	6 5	NW.	4	C. S.	6		6 5	NW.	3	C. S.	1		6 5	S. by W.	2	K.	10
	8 5	NW.	4	C. K. S.	9		8 5	NW.	4	Clear.	0		8 5	S.	2	C. K.	8
	9 5	W.	3	C. K. S.	8		9 5	NW.	4	Clear.	0		9 5	S.	1	C. K.	10
	10 5	NW.	4	C. K.	9		10 5	NW.	4	Clear.	0		10 5	S.	1	C. K.	10
	Noon.	NW.	3	C. K.	10		Noon.	-	-	-	-		Noon.	-	-	-	-
	2 5	NW.	4	C. K.	8		2 5	NW.	3	C.	1		2 5	S. SW.	1	C. K.	10
	3 5	NW.	4	C. K.	6		3 5	NW.	2	C.	1		3 5	S. by W.	1	C. K.	10
	4 5	NW.	4	C. K.	4		4 5	W.	2	Clear.	0		4 5	S. by W.	1	C. K.	10
	6 5	W. NW.	2	K. S.	3		6 5	W.	1	S.	1		6 5	S.	1	C.	4
	8 5	NW.	3	S.	2		8 5	NW.	1	Clear.	0		8 5	S.	1	C.	6
	9 5	NW.	3	S.	2		9 5	NW.	1	Clear.	0		9 5	S.	2	C. K.	6
	10 5	NW.	3	S.	2		10 5	SW.	1	Clear.	0		10 5	S.	2	C. K.	7
Mar. 13	0 5	S.	3	C. K.	8	Mar. 14	0 5	N.	1	C. K.	6	Mar. 15	0 5	N.	2	N.	10
	2 5	S.	3	C. K.	10		2 5	NE.	2	C. K.	8		2 5	N.	1	N.	10
	3 5	S.	1	C. K.	10		3 5	NE.	3	C. K.	10		3 5	N.	1	K.	10
	4 5	S.	1	K.	10		4 5	NE.	4	K.	10		4 5	N. by W.	1	K.	10
	6 5	SW.	2	K.	10		6 5	NE.	4	K.	10		6 5	N. by W.	1	K.	10
	8 5	S. by W.	1	K.	10		8 5	NE.	3	K.	10		8 5	N. by W.	2	K.	10
	9 5	NE.	1	N.	10		9 5	NE.	3	Mist.	10		9 5	N.	3	C. K.	10
	10 5	S.	1	K.	10		10 5	NE.	3	Mist.	10		10 5	N.	4	C. K.	10
	Noon.	S.	1	C. K.	6		Noon.	N.	3	Mist.	10		Noon.	N.	5	C. K.	9
	2 5	SW.	3	C. K.	4		2 5	-	-	-	-		2 5	N. NW.	4	C. K.	10
	3 5	-	-	-	-		3 5	NE.	2	N.	10		3 5	N. NW.	4	C. K.	9
	4 5	NW.	4	C. K.	10		4 5	NE.	2	N.	10		4 5	N. NW.	4	C. K.	10
	6 5	N.	2	C. K.	10		6 5	N.	3	N.	10		6 5	NW.	3	C. S.	6
	8 5	NW.	2	K.	10		8 5	N.	2	N.	10		8 5	NW.	4	C. S.	3
	9 5	N.	1	K.	10		9 5	NE.	2	N.	10		9 5	N.	4	C. K. S.	4
	10 5	N.	1	K.	10		10 5	NE.	2	N.	10		10 5	N.	4	C. K. S.	4
Mar. 16	0 5	NW.	4	S.	2	Mar. 17	0 5	NW.	1	C. K.	10	Mar. 18	0 5	NW.	3	C. S.	4
	2 5	NW.	4	C. S.	3		2 5	NW.	1	C. K.	10		2 5	NW.	4	C. S.	6
	3 5	NW.	4	C. S.	2		3 5	NW.	1	C. K.	9		3 5	N.	3	C. S.	4
	4 5	NW.	3	S.	2		4 5	NW.	1	C. K.	8		4 5	N.	2	C. S.	2
	6 5	NW.	3	S.	2		6 5	N.	1	C. K.	10		6 5	N. NE.	2	C. S.	2
	8 5	NW.	2	S.	2		8 5	N.	1	K.	10		8 5	NE.	3	C. K. S.	9
	9 5	NW.	2	S.	1		9 5	NW.	1	K.	10		9 5	NE.	3	C. K. S.	10
	10 5	NW.	3	C.	2		10 5	NW.	3	K.	10		10 5	N. NE.	3	C. K.	10
	Noon.	NW.	3	C.	8		Noon.	NW.	3	K.	10		Noon.	NE.	2	C. K.	10
	2 5	SW.	3	C. K.	8		2 5	NW.	4	K.	10		2 5	NE.	2	N.	10
	3 5	S. by W.	3	C. K.	3		3 5	NW.	2	K.	10		3 5	NE.	1	N.	10
	4 5	S. by W.	3	C. K.	5		4 5	NW.	2	K.	10		4 5	NE.	1	N.	10
	6 5	SW.	2	C. K.	9		6 5	NW.	2	C. K. S.	10		6 5	NE.	1	N.	10
	8 5	W.	1	K.	10		8 5	NW.	3	C. K. S.	10		8 5	NE.	1	N.	10
	9 5	W.	1	K.	10		9 5	NW.	4	C. K. S.	10		9 5	NE.	1	N.	10
	10 5	W.	1	K.	8		10 5	-	-	-	-		10 5	NE.	1	N.	10

REMARKS.

March 12. Hailing at 5.45 a. m.
13. Light shower at 6.10 a. m.
14. Began snowing at 2.45 p. m.
15. Ceased snowing at 3 a. m.; depth, 2½ inches. Gauged, 0.210 inch.
18. Commenced snowing at 12.30 p. m.; ceased at midnight.

Hosted by Google

Day.	Hour.	Wind. Direction	Wind. Force.	Weather.	Portion cloudy.
1861. Mar. 19	h. m. 0 5	N.	1	K.	10
	2 5	N.	1	K.	10
	3 5	N.	1	K.	10
	4 5	N.	2	K.	10
	6 5	N.	2	K.	10
	8 5	N.NW.	1	C. K.	9
	9 5	NW.	1	C. K.	9
	10 5	N.	1	C. S.	3
	Noon.	N.	2	C. S.	2
	2 5	N.	2	C. K.	4
	3 5	NW.	2	C. K.	5
	4 5	NE.	2	C. K.	5
	6 5	N.	2	C. K.	4
	8 5	N.	1	C. K.	3
	9 5	E.	1	C. S.	4
	10 5	NE.	1	C.	2
Mar. 22	0 5	NW.	8	C. K.	6
	2 5	NW.	7	S.	1
	3 5	NW.	7	S.	1
	4 5	NW.	8	S.	1
	6 5	NW.	8	S.	1
	8 5	NW.	6	Clear.	0
	9 5	NW.	7	Clear.	0
	10 5	-	-	-	-
	Noon.	NW.	6	Clear.	0
	2 5	NW.	6	Clear.	0
	3 5	NW.	4	Clear.	0
	4 5	NW.	4	Clear.	0
	6 5	W.	1	Clear.	0
	8 5	NW.	1	Clear.	0
	9 5	NW.	1	Clear.	0
	10 5	NW.	1	Clear.	0
Mar. 25	0 5	N.	1	Clear.	0
	2 5	N.	1	C.	4
	3 5	N.	1	C.	8
	4 5	N.	1	C. K.	6
	6 5	N. by E.	1	C. S.	4
	8 5	S SW.	1	C. S.	2
	9 5	SE.	1	C.	1
	10 5	S.	1	S.	1
	Noon.	S.	1	S.	1
	2 5	S. by E.	2	C. S.	6
	3 5	SE.	3	C. K.	7
	4 5	S.SE.	2	C. K.	8
	6 5	SE.	2	C. K.	10
	8 5	SE.	1	C. K.	10
	9 5	SE.	1	C. K.	6
	10 5	SE.	1	C. K.	10

Day.	Hour.	Wind. Direction	Wind. Force.	Weather.	Portion cloudy.
1861. Mar. 20	h. m. 0 5	N.	1	Clear.	0
	2 5	N.	1	Clear.	0
	3 5	E.	1	Clear.	0
	4 5	SE.	1	Clear.	0
	6 5	S.	1	S.	1
	8 5	S.	1	C. K.	10
	9 5	S.	2	C. K.	10
	10 5	S.	1	C. K.	8
	Noon.	S.	4	C. K.	7
	2 5	S.SE.	4	C. K.	6
	3 5	S SE.	4	C. K.	9
	4 5	S.SE.	4	C. K.	10
	6 5	SE.	3	K.	10
	8 5	SE.	3	K.	10
	9 5	SE.	3	K.	10
	10 5	SE.	4	K.	10
Mar. 23	0 5	W.SW.	2	Clear.	0
	2 5	W.SW.	2	Clear.	0
	3 5	W.SW.	2	C.	2
	4 5	W.	1	C. S.	2
	6 5	W.	1	C. S.	2
	8 5	W.	1	C. S.	2
	9 5	SW.	1	C. S.	2
	10 5	SE.	1	C. S.	2
	Noon.	S.	3	C.	4
	2 5	S.	3	C. K.	6
	3 5	S.	3	C. K.	9
	4 5	S.SE.	3	C. K.	10
	6 5	S.	3	C. K.	10
	8 5	S.	2	C. K.	10
	9 5	S.	3	C. K.	3
	10 5	S. by W.	3	K.	10
Mar. 26	0 5	S.	1	C. K.	8
	2 5	S.	1	K.	10
	3 5	S.	1	N.	10
	4 5	S.	1	N.	10
	6 5	S.	2	K.	10
	8 5	SW.	1	K.	10
	9 5	S.	2	K.	10
	10 5	S.	3	K.	10
	Noon.	S.	6	N.	10
	2 5	S.	3	N.	10
	3 5	S.	3	C. K.	10
	4 5	S. by W.	4	C. K.	8
	6 5	S.	4	C. K.	10
	8 5	S.	3	C. K.	8
	9 5	S.	5	C. K.	10
	10 5	S.	5	C. K.	10

Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.
1861. Mar. 21	h. m. 0 5	S.	3	K.	10
	2 5	SW.	2	K.	10
	3 5	SW.	2	K.	10
	4 5	NW.	4	N.	10
	6 5	NW.	2	N.	10
	8 5	NW.	3	C. K.	1
	9 5	NW.	4	Clear.	0
	10 5	W.NW.	4	Clear.	0
	Noon.	W.NW.	6	C. K.	4
	2 5	W.	8	C. K.	7
	3 5	W.	7	C. K.	10
	4 5	W.	7	C. K.	10
	6 5	NW.	7	K.	10
	8 5	NW.	7	C. K.	7
	9 5	NW.	7	C. K.	9
	10 5	NW.	7	C. K.	5
Mar. 24	0 5	SW.	3	C. K.	3
	2 5	SW.	3	C.	2
	3 5	SW.	3	C.	2
	4 5	NW.	2	Clear.	0
	6 5	W.	2	Clear.	0
	8 5	W.	3	Clear.	0
	9 5	W.	5	Clear.	0
	10 5	W.	6	Clear.	0
	Noon.	W.	6	Clear.	0
	2 5	NW.	8	Clear.	0
	3 5	NW.	9	Clear.	0
	4 5	NW.	8	Clear.	0
	6 5	NW.	6	Clear.	0
	8 5	NW.	2	Clear.	0
	9 5	NW.	2	Clear.	0
	10 5	NW.	1	Clear.	0
Mar. 27	0 5	S.	5	K.	10
	2 5	S.	4	K.	10
	3 5	S.	2	N.	10
	4 5	S.	3	N.	10
	6 5	S.	2	N.	10
	8 5	W.	2	N.	10
	9 5	SW.	1	N.	10
	10 5	SW.	1	K.	10
	Noon.	S.	2	C. K.	10
	2 5	W.	4	C. K.	9
	3 5	W.NW.	7	C.	3
	4 5	W.NW.	7	C.	1
	6 5	W.NW.	4	C. S.	3
	8 5	W.NW.	4	K. S.	3
	9 5	NW.	4	C. K.	4
	10 5	NW.	4	C. K.	2

REMARKS.

March 21. Slight fall of snow at 3, 5, 6, and 7 a. m. Gauged, when melted, 0.200 inch.
23. Slight shower of rain at 5 p m.
26. Slight showers during the day. Amount of rain, 0 016 inch.
27. Began raining at 3 a. m.; continued at intervals, with lightning and thunder, during most of the day. Amount of rain, 0.550 inch.

Hosted by Google

Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.
1861.	h. m.				
Mar. 28	0 5	NW.	4	C. K.	5
	2 5	W.	2	C. S.	2
	3 5	W.	2	C. S.	4
	4 5	W.	2	C. K.	6
	6 5	W.SW.	3	C. K.	9
	8 5	W.SW.	3	C. S.	4
	9 5	W.SW.	3	C. K.	5
	10 5	W.	3	C. K.	7
	Noon.	W.	3	C. K.	10
	2 5	W.	2	C. K.	10
	3 5	W.	1	C. K.	10
	4 5	W.	1	C. K.	10
	6 5	W.	1	C. S.	4
	8 5	NE.	1	Clear.	0
	9 5	N.	1	S.	1
	10 5	NW.	1	S.	1
Mar. 31	0 5	W.NW.	2	C. K.	8
	2 5	W.NW.	1	C. K.	8
	3 5	NW.	2	C. K.	8
	4 5	NW.	2	C. K.	6
	6 5	NW.	2	C. K. S.	9
	8 5	NE.	2	C. K.	10
	9 5	N.	2	C. K.	10
	10 5	E.	1	C. K. S.	9
	Noon.	S.	1	C. K. S.	8
	2 5	S.	1	C. K. S.	10
	3 5	S.	1	C. S.	8
	4 5	SE.	3	C. S.	6
	6 5	SE.	2	C. K. S.	4
	8 5	E.	2	C.	2
	9 5	NE.	1	C.	1
	10 5	NE.	1	C.	1
Apr. 1	0 5	NE.	1	C.	3
	2 5	NE.	1	C. K.	4
	3 5	NE.	1	C. K.	6
	4 5	NE.	1	C. K.	8
	6 5	NE.	1	C. K.	10
	8 5	E.	2	C. K.	9
	9 5	SE.	3	C. K.	10
	10 5	E.SE.	3	C. N.	10
	Noon.	E SE.	4	N.	10
	2 5	SE.	3	N.	10
	3 5	SE.	2	N.	10
	4 5	SE.	2	N.	10
	6 5	SE.	1	K.	10
	8 5	SE.	1	N.	10
	9 5	SE.	1	N.	10
	10 5	SE.	1	K.	10

Day.	Hour.	Wind. Direction	Wind. Force.	Weather.	Portion cloudy.
1861.	h. m.				
Mar. 29	0 5	NW.	1	C. S.	2
	2 5	S.	1	C. K.	7
	3 5	S.	1	C. K.	8
	4 5	S.	1	C. K. S.	6
	6 5	S.SE	1	C. K. S.	8
	8 5	SE.	1	C. S.	4
	9 5	SE.	1	C. S.	3
	10 5	S.	3	C.	1
	Noon.	S.	4	C K.	4
	2 5	S.SE.	4	C. K.	4
	3 5	-	-	-	-
	4 5	S.	3	C. K.	4
	6 5	S.SE.	3	C. K.	7
	8 5	SE.	2	C. K. S.	3
	9 5	SE.	2	C. S.	3
	10 5	SE.	3	C. S.	3
Apr. 2	0 5	NW.	2	K.	10
	2 5	NW.	2	K.	10
	3 5	NW.	2	K. S.	8
	4 5	NW.	2	C. K.	6
	6 5	NW.	2	C. K. S.	6
	8 5	-	-	-	-
	9 5	NW.	3	C. K.	10
	10 5	NW.	4	C. K.	10
	Noon.	NW.	4	C. K.	10
	2 5	-	-	-	-
	3 5	NW.	2	C. K.	8
	4 5	NW.	3	C. K.	10
	6 5	NW.N.	3	C. K.	9
	8 5	N.	1	C. K. S.	7
	9 5	N.	1	C. K. S.	7
	10 5	N.	1	C. K. S.	5

Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy
1861.	h. m.				
Mar. 30	0 5	S.	3	C. K.	6
	2 5	S.	4	C. K.	8
	3 5	S.	4	C. K.	9
	4 5	S.SW.	5	N.	10
	6 5	S.SW.	5	N.	10
	8 5	S.SW.	5	C. K.	8
	9 5	S SW.	4	C. K.	6
	10 5	NW.	5	C. K.	9
	Noon.	W.	6	C. K.	8
	2 5	NW.	6	C. K.	4
	3 5	NW.	8	C. K.	4
	4 5	NW.	8	C.	2
	6 5	NW.	6	C. K.	8
	8 5	NW.	4	C. S.	4
	9 5	NW.	4	C. S.	4
	10 5	NW.	3	C. S.	4
Apr. 3	0 5	N.	1	C.	2
	2 5	NW.	1	C.	1
	3 5	NW.	1	C. K.	6
	4 5	NW.	1	C. K.	8
	6 5	NW.	1	C. K.	-
	8 5	NE.	1	C. K.	18
	9 5	SE.	1	C. K.	10
	10 5	-	-	-	-
	Noon.	S.	1	C. K.	5
	2 5	-	-	-	-
	3 5	-	-	-	-
	4 5	SE.	2	C. K.	6
	6 5	E.	2	C. K.	8
	8 5	E.	1	C. K.	9
	9 5	-	-	-	-
	10 5	NE.	2	C. K.	10

REMARKS.

March 28. The first bloom of the peach trees.
30. The first bloom of the cherry trees. Light rain at 4 a. m.
31. Peach and cherry trees in blossom.
April 1. A light hail shower at 9. 25 and 11. 15 a. m. Rain at intervals. Amount, 0. 120 inch.

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Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.
1861.	h. m.				
Apr. 4	0 5	S.SE.	3	N.	10
	2 5	S SE.	2	N.	10
	3 5	S.SE.	2	K.	10
	4 5	S.SE.	2	K.	10
	6 5	E.	1	K. S.	10
	8 5	NE.	1	K.	10
	9 5	NE.	1	K.	10
	10 5	-	-	-	-
	Noon.	SW.	1	C. K.	10
	2 5	SW.	1	C. K.	10
	3 5	SW.	1	C. K.	10
	4 5	S SW.	1	C. K.	10
	6 5	SW.	1	C. K. S.	1
	8 5	E.	1	C. K. S.	3
	9 5	SE.	1	C. K. S.	9
	10 5	NE.	1	K. S.	2
Apr. 7	0 5	E.	2	K.	10
	2 5	NE.	1	K.	10
	3 5	NE.	1	C. K.	10
	4 5	NE.	1	K. S.	9
	6 5	E.NE.	1	K. S.	10
	8 5	NE.	1	N.	10
	9 5	E.	1	N.	10
	10 5	E.	1	N.	10
	Noon.	SE.	1	N.	10
	2 5	E SE.	2	N.	10
	3 5	E.SE.	1	N.	10
	4 5	SE.	1	N.	10
	6 5	SE.	1	N.	10
	8 5	E.	1	N.	10
	9 5	E.	1	N.	10
	10 5	E.	1	N.	10
Apr. 10	0 5	NE.	6	N.	10
	2 5	NE.	6	N.	10
	3 5	NE.	6	N.	10
	4 5	NE.	6	N.	10
	6 5	NE.	6	N.	10
	8 5	N. by E.	4	N.	10
	9 5	N. by E.	4	N.	10
	10 5	N. by E.	4	K.	10
	Noon.	N.NE.	4	K. S.	10
	2 5	N.	4	C. K.	10
	3 5	-	-	-	-
	4 5	NE.	3	C. K.	10
	6 5	NE.	2	C. K.	10
	8 5	N.	1	K. S.	3
	9 5	SW.	1	K. S.	1
	10 5	SW.	1	Clear.	0

Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy
1861.	h. m.				
Apr. 5	0 5	N.	1	S.	1
	2 5	NW.	1	S.	1
	3 5	NW.	1	Clear.	0
	4 5	NW.	1	Clear.	0
	6 5	NW.	1	Foggy.	-
	8 5	NW.	1	C.	4
	9 5	SW.	1	C.	5
	10 5	-	-	-	-
	Noon.	N. by W.	2	C. K.	9
	2 5	-	-	-	-
	3 5	-	-	-	-
	4 5	S SW.	1	C. K.	10
	6 5	W.	1	C. K.	10
	8 5	SW.	1	C. K.	10
	9 5	W.	1	C. K.	10
	10 5	W.	1	C. K.	9
Apr. 8	0 5	E.	1	K.	10
	2 5	NE.	2	K.	10
	3 5	NE.	2	K.	10
	4 5	NE.	2	K.	10
	6 5	SE.	2	K.	10
	8 5	E.	1	N.	10
	9 5	E.	1	N.	10
	10 5	E.	2	N.	10
	Noon.	E.	1	N.	10
	2 5	E.	3	N.	10
	3 5	E.	3	K.	10
	4 5	E.	3	N.	10
	6 5	NE.	3	N.	10
	8 5	NE.	4	N.	10
	9 5	NE.	4	N.	10
	10 5	NE.	4	N.	10
Apr. 11	0 5	W.	1	Clear.	0
	2 5	NW.	1	Clear.	0
	3 5	NW.	1	Clear.	0
	4 5	NW.	2	Clear.	0
	6 5	W.	2	Clear.	0
	8 5	N.	1	S.	1
	9 5	N.	2	C.	4
	10 5	E.	2	C.	7
	Noon.	-	-	-	-
	2 5	-	-	-	-
	3 5	-	-	-	-
	4 5	SE.	2	C. K.	6
	6 5	SE.	1	C. K.	8
	8 5	SE.	1	C. S.	2
	9 5	SE.	1	S.	1
	10 5	E.	1	S.	1

Day.	Hour.	Wind. Direction	Wind. Force.	Weather.	Portion cloudy.
1861.	h. m.				
Apr 6	0 5	NW.	1	K.	10
	2 5	NW.	1	K.	10
	3 5	NE.	1	K.	10
	4 5	NE.	1	K.	10
	6 5	NE.	1	C. K. S.	10
	8 5	N.	1	N.	10
	9 5	-	-	-	-
	10 5	E.	1	K.	10
	Noon.	E.	1	K.	9
	2 5	-	-	-	-
	3 5	-	-	-	-
	4 5	S.	1	C. K.	9
	6 5	SE.	2	C. S.	4
	8 5	NE.	2	C. K. S.	3
	9 5	NE.	2	C. S.	2
	10 5	NE.	2	C. K.	6
Apr. 9	0 5	NE.	5	N.	10
	2 5	NE.	5	N.	10
	3 5	NE.	6	N.	10
	4 5	NE.	6	N.	10
	6 5	NE.	6	N.	10
	8 5	NE.	6	N.	10
	9 5	NE.	6	N.	10
	10 5	-	-	-	10
	Noon.	NE.	6	N.	10
	2 5	NE.	7	N.	10
	3 5	NE.	7	N.	10
	4 5	NE.	6	N.	10
	6 5	NE.	6	N.	10
	8 5	NE.	6	N.	10
	9 5	NE.	6	N.	10
	10 5	NE.	6	N.	10
Apr. 12	0 5	S.	1	S.	1
	2 5	SE.	2	K.	4
	3 5	SE.	2	K. S.	6
	4 5	SE.	1	K. S.	6
	6 5	SE.	1	K. S.	10
	8 5	E.	1	N.	10
	9 5	E.	1	K.	10
	10 5	SE.	1	K.	10
	Noon.	-	-	-	-
	2 5	-	-	-	-
	3 5	E.	1	N.	10
	4 5	SE.	1	N.	10
	6 5	SE.	1	N.	10
	8 5	SE.	3	N.	10
	9 5	SE.	3	N.	10
	10 5	SE.	3	N.	10

REMARKS.

April 4. Light shower at 12. 10 a. m.
6. Light shower of rain and hail at 6 a. m.
7. Commenced raining at 6. 45 a. m. Amount of rain, 0. 280 inch.
8. Commenced raining at 8 a. m.
9. Continued raining all day. Amount of rain, 1. 600 inch.
10. Ceased raining at 9. 30 a. m.
12. Slight shower of rain at 8 a. m. Raining at 3 p. m.

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Day.	Hour.	WIND. Direction.	WIND. Force.	Weather	Portion cloudy	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.
1861.	h. m.					1861.	h. m.						h. m.				
Apr. 13	0 5	SE.	4	N.	10	Apr. 14	0 5	SW.	1	C. K.	10	Apr. 15	0 5	NW.	1	C. S.	2
	2 5	SE.	4	N.	10		2 5	NW.	2	K.	4		2 5	W.	1	S.	1
	3 5	S. by E.	5	N.	10		3 5	-	-	-	-		3 5	W.	1	C. S.	4
	4 5	S. by E.	6	K.	10		4 5	SW.	1	C. K.	6		4 5	SW.	1	C. S.	4
	6 5	S. by E.	6	N.	10		6 5	SW.	2	C. K.	4		6 5	W.	1	C. S.	3
	8 5	S. by E.	2	N.	10		8 5	W.	2	S.	1		8 5	N.	1	C. K.	10
	9 5	S SW.	1	N.	10		9 5	W.	4	C. S.	2		9 5	N.NE.	1	C. K.	10
	10 5	S.SW.	1	K.	10		10 5	W.SW.	4	C. K.	4		10 5	NE.	2	C. K.	10
	Noon.	-	-	-	-		Noon.	W.	3	C. K.	8		Noon.	N.	1	N.	10
	2 5	-	-	-	-		2 5	W.	4	C. K.	9		2 5	-	-	-	-
	3 5	SE.	1	C. K.	6		3 5	W.	4	C. K.	7		3 5	-	-	-	-
	4 5	NW.	4	C. K.	7		4 5	W.	4	C. K.	7		4 5	N.	1	K.	10
	6 5	W.	2	C. K.	6		6 5	W.	2	C. K.	6		6 5	NE.	2	K.	10
	8 5	W.NW.	6	N.	10		8 5	NW.	2	K. S.	2		8 5	NE.	3	K.	10
	9 5	W.NW.	4	C. K.	9		9 5	NW.	2	K. S.	1		9 5	NE.	4	K.	10
	10 5	W.NW.	2	C. K.	5		10 5	NW.	2	K. S.	1		10 5	NE.	4	K.	10
Apr. 16	0 5	NE.	3	K.	10	Apr. 17	0 5	N.	4	N.	10	Apr. 18	0 5	NW.	1	Clear.	0
	2 5	NE.	3	N.	10		2 5	NW.	4	N.	10		2 5	NW.	1	S.	1
	3 5	NE.	4	N.	10		3 5	NW.	4	N.	10		3 5	W.	1	K. S.	4
	4 5	NE.	4	N.	10		4 5	NW.	4	N.	10		4 5	W.	1	C. K.	6
	6 5	NE.	4	N.	10		6 5	NW.	5	K.	10		6 5	SW.	1	C. K. S.	9
	8 5	NE.	4	N.	10		8 5	NW.	5	K.	10		8 5	S.	2	C. K. S.	10
	9 5	NE.	3	N.	10		9 5	NW.	5	C. K.	10		9 5	S.	2	C. K. S.	10
	10 5	NE.	5	N.	10		10 5	NW.	5	C. K.	10		10 5	-	-	-	-
	Noon.	N.	7	K.	10		Noon.	NW.	6	C. K.	10		Noon.	S.	4	C. K.	9
	2 5	N.NE.	6	K.	10		2 5	-	-	-	-		2 5	S.	3	C. K.	7
	3 5	N.NE.	4	N.	10		3 5	-	-	-	-		3 5	-	-	-	-
	4 5	N.	3	N.	10		4 5	NW.	6	C. K.	10		4 5	S.	3	C. K.	3
	6 5	N. by W.	2	N.	10		6 5	NW.	5	C. S.	4		6 5	S. by W.	1	C. K.	5
	8 5	N.NW.	2	N.	10		8 5	NW.	3	S.	1		8 5	-	-	-	-
	9 5	N.	1	N.	10		9 5	NW.	3	Clear.	0		9 5	SW.	1	K.	10
	10 5	NW.	4	N.	10		10 5	NW.	1	Clear.	0		10 5	SW.	1	K.	10
Apr. 19	0 5	SW.	1	K.	10	Apr. 20	0 5	NW.	3	C. S.	4	Apr. 21	0 5	SW.	1	C. K.	6
	2 5	SW.	4	C. S.	6		2 5	NW.	1	C. S.	3		2 5	S.	1	C. K.	8
	3 5	SW.	3	C. S.	4		3 5	NW.	1	C. S.	2		3 5	SE.	1	C.	4
	4 5	SW.	2	C. S.	2		4 5	NW.	2	C. S.	1		4 5	SE.	1	C.	4
	6 5	W.	1	C. S.	4		6 5	NW.	2	S.	1		6 5	S.	1	C. K.	4
	8 5	NW.	2	C. K.	10		8 5	NW.	2	C.	1		8 5	S.	1	C. K.	1
	9 5	W.	3	C. K.	10		9 5	-	-	-	-		9 5	S.	1	C. K.	4
	10 5	NW.	4	C. K.	9		10 5	-	-	-	-		10 5	S.	1	C. K.	6
	Noon.	NW.	4	C. K.	10		Noon.	NW.	3	C. K.	4		Noon.	SE.	1	C. K.	3
	2 5	-	-	-	-		2 5	NW.	2	C.	1		2 5	SE.	1	C. K.	2
	3 5	NW.	4	C. K.	8		3 5	-	-	-	-		3 5	SE.	1	C. K.	1
	4 5	NW.	5	C. K.	5		4 5	NW.	1	C.	1		4 5	S.	2	C.	1
	6 5	NW.	4	C. K.	8		6 5	-	-	-	-		6 5	S.	1	C. K.	4
	8 5	NW.	2	C. K.	6		8 5	W.	1	Clear.	0		8 5	S.	1	S.	1
	9 5	NW.	2	C.	2		9 5	SW.	1	Clear.	0		9 5	S.	1	C. S.	4
	10 5	NW.	1	C.	4		10 5	SW.	1	C.	3		10 5	S.	1	C. K.	8

REMARKS.

April 13. Ceased raining at 9 a. m. Thunder storms at 5, 7, and 8 p. m. Amount of rain, of yesterday and to-day, 1. 386 inch.
16. Commenced raining at 12. 15 a. m.; ceased at 11 a. m. Amount of rain, 0. 920 inch.
17. Raining since 3 p. m. of yesterday until 8 a. m. to-day. Amount of rain, 0. 124 inch.

Hosted by Google

Day.	Hour.	Wind. Direction	Wind. Force.	Weather.	Portion cloudy.
1861. Apr. 22	h. m. 0 5	S.	1	C. K.	10
	2 5	S. SW.	3	K.	10
	3 5	S. SW.	1	C. K.	10
	4 5	S. SW.	1	C. K.	10
	6 5	S.	1	C. K.	10
	8 5	S. SW.	1	C. K.	3
	9 5	S.	1	C. K.	6
	10 5	S.	1	C. K.	4
	Noon.	S.	2	C. K.	8
	2 5	-	-	-	-
	3 5	S.	2	C. K.	6
	4 5	S.	3	C. K.	10
	6 5	S. SW.	2	C. K.	10
	8 5	S. SW.	1	C. K.	10
	9 5	S. SW.	1	C. K.	8
	10 5	S.	1	C. K.	8
Apr. 25	0 5	W.	1	C.	1
	2 5	NW.	1	C. K.	3
	3 5	NW.	1	C.	1
	4 5	NW.	1	Clear.	0
	6 5	W. SW.	1	Clear.	0
	8 5	W. SW.	4	Clear.	0
	9 5	W.	4	C. K.	3
	10 5	W.	4	C. K.	6
	Noon.	W.	4	C. K.	4
	2 5	W.	4	C. K.	4
	3 5	-	-	-	-
	4 5	W.	2	C. K.	6
	6 5	W.	2	C. K.	4
	8 5	W.	1	C. K.	8
	9 5	NW.	1	C. K.	4
	10 5	NW.	1	Clear.	0
Apr. 28	0 5	S. SW.	4	C. K.	6
	2 5	S. SW.	2	C. K.	10
	3 5	S. SW.	3	C. K.	10
	4 5	S.	4	C. K.	10
	6 5	S.	4	K.	10
	8 5	S.	4	K.	10
	9 5	S.	4	K.	10
	10 5	NW.	4	N.	10
	Noon.	NW.	4	N.	10
	2 5	NW.	5	C. K.	4
	3 5	NW.	7	C. K.	7
	4 5	NW.	6	C. K.	4
	6 5	NW.	4	C. K.	1
	8 5	NW.	3	Clear.	0
	9 5	NW.	3	Clear.	0
	10 5	NW.	2	Clear.	0

Day.	Hour.	Wind. Direction	Wind. Force	Weather.	Portion cloudy.
1861. Apr. 23	h. m. 0 5	S.	1	C.	3
	2 5	S.	1	C. K.	5
	3 5	S.	1	C. K.	6
	4 5	S.	1	C. K.	8
	6 5	S.	1	C. K.	7
	8 5	S. SE.	1	C. K.	7
	9 5	S. SE.	1	C. K.	3
	10 5	SE.	1	C. K.	4
	Noon.	SE.	1	C. K.	2
	2 5	-	-	-	-
	3 5	S. SW.	2	C. K.	9
	4 5	S. SW.	2	C. K.	8
	6 5	S. SW.	3	C. K.	4
	8 5	S.	1	C. K.	6
	9 5	S.	1	C. K.	7
	10 5	S.	1	C. K.	8
Apr. 26	0 5	NW.	1	C.	1
	2 5	NW.	1	C.	2
	3 5	NW.	1	S.	1
	4 5	NW.	1	S.	1
	6 5	NW.	1	C. S.	1
	8 5	NE.	1	C. S.	2
	9 5	E.	1	C. S.	0
	10 5	SE.	1	C. S.	2
	Noon.	S.	1	Clear.	0
	2 5	S.	1	Clear.	0
	3 5	SE.	1	C.	1
	4 5	SE.	1	C.	1
	6 5	SE.	2	Clear.	0
	8 5	SE.	2	Clear.	0
	9 5	SE.	1	Clear.	0
	10 5	SE.	2	Clear.	0
Apr. 29	0 5	NW.	1	Clear.	0
	2 5	NW.	1	Clear.	0
	3 5	NW.	1	Clear.	0
	4 5	W.	1	Clear.	0
	6 5	W.	1	Clear.	0
	8 5	W. SW.	3	Clear.	0
	9 5	SW.	3	Clear.	0
	10 5	NW.	3	Clear.	0
	Noon.	W.	3	Clear.	0
	2 5	-	-	-	-
	3 5	SE.	3	C.	1
	4 5	S.	3	C.	1
	6 5	S.	1	Clear.	0
	8 5	S.	1	S.	1
	9 5	S.	1	Clear.	0
	10 5	S.	1	C.	1

Day.	Hour.	Wind. Direction.	Wind. Force	Weather.	Portion cloudy.
1861. Apr. 24	h. m. 0 5	SW.	3	C.	6
	2 5	SW.	3	C.	6
	3 5	SW.	2	C.	4
	4 5	SW.	1	C.	-
	6 5	S.	1	Hazy.	-
	8 5	S.	1	Hazy.	-
	9 5	SE.	2	C.	2
	10 5	-	-	-	-
	Noon.	SE.	2	C.	1
	2 5	-	-	-	-
	3 5	NW.	5	N.	10
	4 5	NW.	4	K. N.	10
	6 5	NW.	4	C. K. S.	8
	8 5	NW.	1	C. K. S.	4
	9 5	NW.	1	C.	1
	10 5	NW.	1	C.	2
Apr. 27	0 5	SE.	1	Clear.	0
	2 5	S.	1	Clear.	0
	3 5	S.	1	C.	2
	4 5	S.	1	C. S.	4
	6 5	S.	1	C. S.	3
	8 5	S.	2	C. S.	4
	9 5	S.	2	C. K.	8
	10 5	S. by E.	2	C. K.	9
	Noon.	-	-	-	-
	2 5	-	-	-	-
	3 5	S.	3	C. K.	4
	4 5	S.	4	C. K.	1
	6 5	S.	5	C.	1
	8 5	S.	4	S.	1
	9 5	S.	4	C. S.	2
	10 5	S.	4	C. S.	1
Apr. 30	0 5	SW.	1	C.	2
	2 5	SW.	1	Clear.	0
	3 5	W.	1	Clear.	0
	4 5	SW.	1	Clear.	0
	6 5	SW.	1	C.	4
	8 5	S. by W.	2	C. K.	8
	9 5	S. by E.	1	C. K.	9
	10 5	-	-	-	-
	Noon.	NW.	8	N.	10
	2 5	-	-	-	-
	3 5	-	-	-	-
	4 5	NW.	6	C.	1
	6 5	NW.	3	C.	1
	8 5	NW.	1	S.	1
	9 5	NW.	2	Clear.	0
	10 5	NW.	2	Clear.	0

REMARKS.

April 24. Gust at 2 p. m., with lightning and thunder. Amount of rain, 0. 116 inch.
28. Commenced raining at 9. 35 a m.; ceased about noon. Amount, 0. 330 inch.
30. Light rain at noon; not measurable.

Hosted by Google

Day.	Hour.	Wind. Direction	Wind. Force.	Weather.	Portion cloudy.
1861.	h. m.				
May 1	0 5	NW.	2	Clear.	0
	2 5	W.	1	Clear.	0
	3 5	W.	1	Clear.	0
	4 5	SW.	3	C. S.	2
	6 5	SW.	3	C. K.	10
	8 5	SW.	2	C. K.	6
	9 5	NW.	4	C. K.	2
	10 5	W.	6	C. K.	2
	Noon.	-	-	-	-
	2 5	-	-	-	-
	3 5	-	-	-	-
	4 5	NW.	6	C. K.	4
	6 5	-	-	-	-
	8 5	-	-	-	-
	9 5	-	-	-	-
	10 5	NW.	4	C. K.	4
May 4	0 5	NE.	3	K.	10
	2 5	NE.	3	N.	10
	3 5	N.	3	N.	10
	4 5	N.	3	N.	10
	6 5	N.	4	N.	10
	8 5	N. by W.	3	N.	10
	9 5	NW.	3	N.	10
	10 5	N.	3	N.	10
	Noon.	N.	4	N.	10
	2 5	N.	4	K.	10
	3 5	N.NW.	2	K.	10
	4 5	N.NE.	2	C. K.	3
	6 5	N.	1	Clear.	0
	8 5	N.	1	Clear.	0
	9 5	N.	1	Clear.	0
	10 5	NW.	1	Clear.	0
May 7	0 5	SW.	1	S.	1
	2 5	SW.	1	Clear.	0
	3 5	SW.	1	Clear.	0
	4 5	SW.	2	Clear.	0
	6 5	SW.	3	Clear.	0
	8 5	SW.	4	Clear.	0
	9 5	SW.	4	C. K.	1
	10 5	-	-	-	-
	Noon.	W.	5	C. K.	5
	2 5	SW.	4	C. K.	6
	3 5	-	-	-	-
	4 5	SW.	5	C. K.	5
	6 5	W.	2	C. S.	3
	8 5	W.	1	K.	9
	9 5	W.	1	K.	10
	10 5	W.	2	C.	4

Day.	Hour.	Wind. Direction	Wind. Force.	Weather.	Portion cloudy.
1861.	h. m.				
May 2	0 5	NW.	4	K.	10
	2 5	NW.	4	K.	10
	3 5	NW.	4	Clear.	0
	4 5	NW.	4	Clear.	0
	6 5	NW.	3	Clear.	0
	8 5	NW.	4	Clear.	0
	9 5	NW.	4	S.	1
	10 5	NW.	4	Clear.	0
	Noon.	NW.	4	Clear.	0
	2 5	-	-	-	-
	3 5	-	-	-	-
	4 5	NW.	4	Clear.	0
	6 5	-	-	-	-
	8 5	NW.	1	S.	1
	9 5	NW.	1	Clear.	0
	10 5	NW.	1	S.	1
May 5	0 5	NW.	1	Clear.	0
	2 5	NW.	1	Clear.	0
	3 5	NW.	1	Clear.	0
	4 5	W.	1	Fog.	0
	6 5	W.	1	Fog.	0
	8 5	SW.	1	Fog.	0
	9 5	SE.	1	C. K.	8
	10 5	SE.	1	C. K.	10
	Noon.	SE.	2	C. K.	9
	2 5	SE.	4	C. K.	10
	3 5	SE.	3	C. K.	10
	4 5	S.	2	C. K.	10
	6 5	SE.	3	N.	10
	8 5	SE.	3	N.	10
	9 5	SE.	3	N.	10
	10 5	SE.	3	N.	10
May 8	0 5	SW.	1	C. K.	8
	2 5	SW.	1	C. K.	6
	3 5	SW.	1	C. K.	10
	4 5	W.	1	C. K.	9
	6 5	S.	3	C. K.	2
	8 5	W.	3	C.	1
	9 5	-	-	-	-
	10 5	-	-	-	-
	Noon.	W.	4	C. K.	4
	2 5	W.	4	N.	10
	3 5	-	-	-	-
	4 5	W.	3	C. K.	4
	6 5	NW.	4	C. K.	4
	8 5	NW.	2	C. K. S.	3
	9 5	NW.	3	C. S.	1
	10 5	NW.	3	Clear.	0

Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.
1861.	h. m.				
May 3	0 5	NW.	1	Clear.	0
	2 5	NW.	1	Clear.	0
	3 5	NW.	1	Clear.	0
	4 5	W.	1	Clear.	0
	6 5	W.	1	C. K.	9
	8 5	S.	2	C. K.	10
	9 5	S.	3	N.	10
	10 5	SW.	1	N.	10
	Noon.	-	-	-	-
	2 5	-	-	-	-
	3 5	NE.	2	N.	10
	4 5	NE.	2	N.	10
	6 5	NE.	1	N.	10
	8 5	NE.	2	N.	10
	9 5	NE.	2	N.	10
	10 5	NE.	3	N.	10
May 6	0 5	S.	2	N.	10
	2 5	S.	2	N.	10
	3 5	S.	2	N.	10
	4 5	E.	1	N.	10
	6 5	NE.	1	N.	10
	8 5	NE.	2	N.	10
	9 5	NE.	1	N.	10
	10 5	NE.	1	N.	10
	Noon.	-	-	-	-
	2 5	-	-	-	-
	3 5	-	-	-	-
	4 5	NE.	1	Foggy.	10
	6 5	SE.	3	Foggy.	10
	8 5	NW.	4	K.	9
	9 5	NW.	2	K.	10
	10 5	NW.	2	N.	9
May 9	0 5	NW.	2	Clear.	0
	2 5	W.	1	Clear.	0
	3 5	W.	1	Clear.	0
	4 5	W.	1	C. S.	1
	6 5	NW.	1	C. S.	3
	8 5	NW.	1	C.	2
	9 5	NW.	2	C.	1
	10 5	-	-	-	-
	Noon.	-	-	-	-
	2 5	-	-	-	-
	3 5	-	-	-	-
	4 5	W.	3	C.	1
	6 5	NW.	2	Clear.	0
	8 5	NW.	1	Clear.	0
	9 5	NW.	1	Clear.	0
	10 5	NW.	1	Clear.	0

REMARKS.

May 3. Began raining at 8.45 a. m.; continued all day.
4 Ceased raining at noon. Amount of rain, 0.814 inch.
5. Began raining at 6 p. m.; continued during the night.
6. Ceased raining about noon. Amount of rain during the storm, 0.740 inch.

Hosted by Google

Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.
1861. May 10	h m. 0 5	NW.	1	Clear.	0
	2 5	NW.	1	Clear.	0
	3 5	NW.	1	Clear.	0
	4 5	NW.	1	Clear.	0
	6 5	NE.	3	C.	9
	8 5	NE.	3	C.	10
	9 5	NE.	2	C. K.	9
	10 5	-	-	N.	10
	Noon.	-	-	-	-
	2 5	-	-	-	-
	3 5	-	-	-	-
	4 5	NE.	1	N.	10
	6 5	S.	1	K.	10
	8 5	NW.	2	C. K.	9
	9 5	N.	1	C. K.	10
	10 5	N.	1	K.	10
1861. May 11	h. m. 0 5	NW.	1	Clear.	0
	2 5	NW.	1	Clear.	0
	3 5	W.	1	Hazy.	0
	4 5	W.	1	Thick fog.	0
	6 5	W.	1	Thick fog.	0
	8 5	S.	1	Foggy.	0
	9 5	-	-	-	-
	10 5	-	-	-	-
	Noon.	W.	4	C. K.	9
	2 5	-	-	-	-
	3 5	-	-	-	-
	4 5	SW.	1	C. K.	10
	6 5	SW.	1	C. K.	8
	8 5	NW.	1	K.	10
	9 5	NW.	1	K.	10
	10 5	NW.	1	K.	10
1861. May 12	h. m. 0 5	NW.	1	K. S.	2
	2 5	NW.	2	Clear.	0
	3 5	NW.	2	Clear.	0
	4 5	NW.	2	Clear.	0
	6 5	NW.	1	Clear.	0
	8 5	NW.	4	C. K.	3
	9 5	NW.	1	Clear.	0
	10 5	W.	2	Clear.	0
	Noon.	E. NE.	2	C.	2
	2 5	E.	2	C. S.	4
	3 5	NW.	1	C K.	8
	4 5	E.	2	N.	9
	6 5	NE.	2	C. K.	8
	8 5	NE.	1	K. N.	8
	9 5	N.	1	C. K.	8
	10 5	N.	1	C. K.	7
May 13	0 5	E.	1	C. K.	9
	2 5	E.	1	C. K.	8
	3 5	NE.	1	C. K.	6
	4 5	NE.	1	C. K.	6
	6 5	NE.	1	C. K.	7
	8 5	SE.	3	K.	10
	9 5	SE.	3	K.	10
	10 5	S. SE.	3	C. K.	9
	Noon.	SE.	3	C. K.	6
	2 5	-	-	-	-
	3 5	S. SE.	3	C. K.	5
	4 5	S. SE.	3	C. K.	6
	6 5	E. SE.	2	C. K.	8
	8 5	NE.	2	C. K.	9
	9 5	NW.	3	K.	10
	10 5	NE.	2	K.	9
May 14	0 5	N.	3	K.	10
	2 5	NE.	1	N.	10
	3 5	NW.	1	N.	10
	4 5	NW.	1	N.	10
	6 5	SW.	1	Hazy K.	10
	8 5	SW.	1	K.	10
	9 5	-	-	-	-
	10 5	-	-	-	-
	Noon.	W.	2	C. K.	4
	2 5	-	-	-	-
	3 5	-	-	-	-
	4 5	SW.	2	C. K.	6
	6 5	NW.	4	C. K.	8
	8 5	N. by W.	4	C. K.	9
	9 5	N. by W.	2	C. K.	6
	10 5	N. by W.	3	C. K.	4
May 15	0 5	NW.	2	Clear.	0
	2 5	NW.	1	C.	2
	3 5	NW.	1	C. K.	6
	4 5	NW.	1	C. K.	8
	6 5	NW.	1	C. S.	4
	8 5	N.	3	C. K.	2
	9 5	NW.	3	C. K.	1
	10 5	-	-	-	-
	Noon.	SE.	3	C. K.	1
	2 5	-	-	-	-
	3 5	S.	3	C. K.	1
	4 5	S.	4	C. K.	3
	6 5	S.	4	Clear.	0
	8 5	S.	1	Clear.	0
	9 5	S.	1	Clear.	0
	10 5	S.	1	Clear.	0
May 16	0 5	S.	1	Clear.	0
	2 5	W.	3	Clear.	0
	3 5	NW.	4	C.	2
	4 5	NW.	4	C. S.	3
	6 5	NW.	3	C. K.	4
	8 5	W.	3	C. K.	5
	9 5	NW.	4	C. S.	3
	10 5	NW.	4	C.	2
	Noon.	-	-	-	-
	2 5	-	-	-	-
	3 5	-	-	-	-
	4 5	NW.	4	C. K.	1
	6 5	NW.	4	Clear.	0
	8 5	NW.	2	C.	1
	9 5	NW.	2	Clear.	0
	10 5	NW.	2	Clear.	0
May 17	0 5	NW.	1	Clear.	0
	2 5	NW.	1	Clear.	0
	3 5	NW.	1	Clear.	0
	4 5	NW.	1	Clear.	0
	6 5	NW.	1	Clear.	0
	8 5	NW.	3	Clear.	0
	9 5	-	-	-	-
	10 5	-	-	-	-
	Noon.	W. NW.	4	-	1
	2 5	-	-	-	-
	3 5	-	-	-	-
	4 5	N. by W.	4	C.	1
	6 5	NW.	4	C.	1
	8 5	NW.	1	Clear.	0
	9 5	NW.	1	Clear.	0
	10 5	NW.	1	Clear.	0
May 18	0 5	NW.	3	Clear.	0
	2 5	NW.	2	Clear.	0
	3 5	NW.	2	Clear.	0
	4 5	NW.	2	Clear.	0
	6 5	NW.	2	Clear.	0
	8 5	NW.	1	Clear.	0
	9 5	NW.	2	C.	1
	10 5	-	-	-	-
	Noon.	-	-	-	-
	2 5	-	-	-	-
	3 5	NW.	3	Clear.	0
	4 5	NW.	2	Clear.	0
	6 5	NW.	1	Clear.	0
	8 5	NW.	1	C. S.	2
	9 5	NW.	1	C.	1
	10 5	NW.	1	C.	1

REMARKS.

May 12. Slight showers at 4 and 7 p. m ; not measurable.
13. Lightning and thunder from 7 p. m. until midnight, with light shower.
14. Rain at 2 a. m. Amount of showers last night and this morning, 0. 180 inch.

Hosted by Google

Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction	WIND. Force.	Weather.	Portion cloudy.
1861.	h. m					1861.	h. m					1861.	h. m				
May 19	0 5	NE.	3	C.	1	May 20	0 5	E.	1	K.	10	May 21	0 5	NW.	1	N.	10
	2 5	NE.	2	C.	1		2 5	NE.	1	N.	10		2 5	NW.	2	K.	10
	3 5	NE.	2	C. K.	6		3 5	NE.	1	N.	10		3 5	NW.	2	K.	10
	4 5	NE.	1	C. K.	8		4 5	NE.	2	N.	10		4 5	NW.	2	K.	10
	6 5	NE.	1	C. K.	9		6 5	NE.	1	N.	10		6 5	NW.	2	K.	10
	8 5	NE.	2	K.	10		8 5	NE.	2	N.	10		8 5	NE.	3	C. K.	4
	9 5	-	-	-	-		9 5	NE.	1	N.	10		9 5	-	-	-	-
	10 5	SE.	2	C. K.	10		10 5	NE.	1	N.	10		10 5	N.	3	C. K.	3
	Noon.	SE.	2	C. K.	10		Noon.	NE.	3	N.	10		Noon.	N.	2	C. K.	9
	2 5	SE.	2	K.	10		2 5	-	-	-	-		2 5	N.	1	C. K.	8
	3 5	SE.	3	K.	10		3 5	-	-	-	-		3 5	N.	2	C. K.	9
	4 5	SE.	2	K.	10		4 5	N.	4	K.	10		4 5	NW.	1	C. K.	8
	6 5	SE.	2	K.	10		6 5	N.	3	K.	10		6 5	W.	1	C. K.	4
	8 5	SE.	1	N.	10		8 5	N. by E.	4	K.	10		8 5	W.	1	C. K.	10
	9 5	SE.	1	N.	10		9 5	N. by E.	3	K.	10		9 5	W.	1	C. K.	8
	10 5	E.	1	N.	10		10 5	N. by E.	3	K.	10		10 5	NW.	2	C. K.	9
May 22	0 5	NW.	1	C. K.	1	May 23	0 5	SW.	1	Clear.	0	May 24	0 5	S.	2	Clear.	0
	2 5	NW.	3	C.	1		2 5	W.	1	Clear.	0		2 5	S.	1	Clear.	0
	3 5	NW.	2	C. K.	4		3 5	W.	1	Hazy.	0		3 5	S.	1	Clear.	0
	4 5	NW.	2	C. K.	6		4 5	W.	1	Foggy.	0		4 5	S. SW.	1	Clear.	0
	6 5	NW.	3	C. S.	2		6 5	NW.	1	Foggy.	0		6 5	S. SW.	1	Hazy.	0
	8 5	SE.	1	C.	1		8 5	NW.	1	Hazy.	0		8 5	S. SW.	1	Hazy.	0
	9 5	N.	2	Clear.	0		9 5	S. W.	1	Hazy.	0		9 5	-	-	-	-
	10 5	NE.	1	C. K.	4		10 5	S. W.	2	Hazy.	1		10 5	-	-	-	-
	Noon.	NE.	4	C. K.	7		Noon.	E. NE.	2	C. K.	3		Noon.	S.	2	C.	1
	2 5	NE.	2	C. K.	4		2 5	-	-	-	-		2 5	S.	3	Clear.	0
	3 5	-	-	-	-		3 5	-	-	-	-		3 5	S.	3	Clear.	0
	4 5	N.	2	C. K.	5		4 5	S.	1	C. K.	3		4 5	S.	3	C.	1
	6 5	N. NE.	1	C. K.	3		6 5	SE.	2	S.	1		6 5	-	-	-	-
	8 5	NW.	1	C.	1		8 5	S.	1	S.	1		8 5	S.	3	S.	1
	9 5	NW.	2	Clear.	0		9 5	S.	1	Clear.	0		9 5	S.	3	C. S.	2
	10 5	S. by E.	1	Clear.	0		10 5	S.	1	Clear.	0		10 5	S.	3	C.	1
May 25	0 5	S.	3	K.	10	May 26	0 5	NW.	1	C.	1	May 27	0 5	S.	2	C.	2
	2 5	S.	1	C. K.	8		2 5	NW.	1	C. K.	8		2 5	S.	2	Clear.	0
	3 5	SE.	1	C. K.	10		3 5	NW.	1	C. K.	4		3 5	S.	3	Clear.	0
	4 5	NE.	1	C. K.	10		4 5	NW.	1	C. K.	4		4 5	S.	3	Clear.	0
	6 5	E.	1	K.	10		6 5	NW.	1	C. K.	4		6 5	S. by W.	4	Clear.	0
	8 5	S.	1	K.	10		8 5	NW.	1	C. K.	6		8 5	SW.	3	K.	2
	9 5	N.	3	N.	10		9 5	SW.	1	C. K.	0		9 5	SW.	4	C. K.	4
	10 5	-	-	-	-		10 5	SW.	2	C.	2		10 5	-	-	-	-
	Noon.	S.	1	C. K.	3		Noon.	SW.	2	C. K.	4		Noon.	SW.	4	C. K.	8
	2 5	-	-	-	-		2 5	S.	2	C. K.	8		2 5	-	-	-	-
	3 5	-	-	-	-		3 5	S.	2	C. K.	10		3 5	SW.	6	C. K.	3
	4 5	W.	3	K.	10		4 5	SE.	1	C. K.	8		4 5	NW.	6	C. K.	3
	6 5	W.	2	C. S.	4		6 5	SE.	2	C. K.	9		6 5	NW.	5	C.	1
	8 5	SW.	1	C.	1		8 5	SE.	2	N.	10		8 5	NW.	4	C. S.	1
	9 5	SW.	1	Clear.	0		9 5	SE.	3	N.	10		9 5	NW.	4	C.	1
	10 5	SW.	1	Clear.	0		10 5	NE.	2	K.	6		10 5	NW.	3	C.	1

REMARKS.

May 19. Showery from 7.40 p. m.
20. Showery most of the day. Amount of rain since commencement, 0.960 inch.
25. Lightning at 4 a. m.; shower at 8 a. m. Amount of rain, 0.110 inch.
26. Raining at 7.40 p. m., with lightning and thunder.

Hosted by Google

Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.
1861. May 28	h m				
	0 5	NW.	1	Clear.	0
	2 5	NW.	4	Clear.	0
	3 5	NW.	4	Clear.	0
	4 5	NW.	3	S.	1
	6 5	NW.	3	Clear.	0
	8 5	NW.	4	Clear.	0
	9 5	W.	3	Clear.	0
	10 5	-	-	-	-
	Noon.	W.	6	C.	1
	2 5	W.	5	Clear.	0
	3 5	-	-	-	-
	4 5	W.	4	Clear.	0
	6 5	W.	2	C.	1
	8 5	NW.	1	C. S.	1
	9 5	NW.	1	C.	1
	10 5	NW.	1	Clear.	0
May 31	0 5	NW.	1	S.	1
	2 5	NW.	1	C. S.	2
	3 5	NE.	1	C. S.	4
	4 5	NE.	1	C. S.	6
	6 5	E.	1	Hazy.	0
	8 5	SE.	1	Clear.	0
	9 5	-	-	-	-
	10 5	SE.	3	C.	1
	Noon.	SE.	2	C. K.	2
	2 5	SE.	3	C. K.	3
	3 5	S.SE.	2	C. K.	4
	4 5	S.SE.	3	C. K.	4
	6 5	SE.	2	C.	2
	8 5	SE.	2	C. S.	2
	9 5	SE.	2	S.	1
	10 5	SE.	3	Clear.	0
June 1	0 5	S.	2	Clear.	0
	2 5	W.	1	Clear.	0
	3 5	S.SW.	1	Clear.	0
	4 5	S.SW.	1	Clear.	0
	6 5	S SW.	1	C. K.	4
	8 5	S.SW.	2	C. K.	4
	9 5	S.	2	C. K.	8
	10 5	S.	2	C. K.	9
	Noon.	S. -	2	C. K.	10
	2 5	S.	2	C. K.	5
	3 5	S.	2	C. K.	9
	4 5	S.	3	C. K.	10
	6 5	S.	3	C. K.	10
	8 5	S.	4	N.	10
	9 5	S.	2	N.	10
	10 5	S.	1	K.	10

Day.	Hour.	Wind. Direction	Wind. Force.	Weather.	Portion cloudy.
1861. May 29	h. m				
	0 5	NW.	1	C. K.	9
	2 5	SW.	1	C. K.	4
	3 5	SW.	1	C. K.	9
	4 5	W.	1	C. K.	10
	6 5	NW.	4	K.	10
	8 5	NW.	4	C. K.	8
	9 5	NW.	4	C. K.	8
	10 5	-	-	-	-
	Noon.	W.	4	C. K.	3
	2 5	NW.	4	C. K.	5
	3 5	N.NW.	3	C. K.	4
	4 5	N.NW.	3	C. K.	3
	6 5	-	-	-	-
	8 5	NW.	4	C. S.	3
	9 5	NW.	1	Clear.	0
	10 5	NW.	1	Clear.	0
June 2	0 5	S.	1	K.	10
	2 5	SE.	1	K.	10
	3 5	SE.	1	K.	10
	4 5	E.	1	C. K.	8
	6 5	NE.	1	C. K.	4
	8 5	N.	1	C. K.	4
	9 5	N.	2	C. K.	8
	10 5	S.SE.	2	C. K.	8
	Noon.	S.	2	C. K.	8
	2 5	SE.	2	C. K.	8
	3 5	SE.	1	C. K.	5
	4 5	S.	1	C. K.	4
	6 5	SE.	2	C. K.	9
	8 5	S.	2	K.	10
	9 5	S.	1	K.	10
	10 5	S.	1	N.	10

Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.
1861. May 30	h. m				
	0 5	NW.	1	Clear.	0
	2 5	NW.	1	Clear.	0
	3 5	NW.	2	Clear.	0
	4 5	NW.	4	Clear.	0
	6 5	NW.	2	Clear.	0
	8 5	NW.	1	Clear.	0
	9 5	SE.	1	C.	1
	10 5	S. by W.	1	C.	1
	Noon.	SE.	2	C.	1
	2 5	-	-	-	-
	3 5	-	-	-	-
	4 5	SW.	1	Clear.	1
	6 5	SW.	1	Clear.	1
	8 5	SW.	1	C. S.	1
	9 5	W.	2	C.	2
	10 5	NW.	1	Clear.	1
June 3	0 5	S.	1	K.	10
	2 5	S.	1	C. K.	10
	3 5	S.	1	C. K.	8
	4 5	S.	1	C. K.	10
	6 5	S.	1	C. K.	8
	8 5	SW.	1	C. K.	10
	9 5	S.	1	C. K.	10
	10 5	-	-	-	-
	Noon.	-	-	-	-
	2 5	-	-	-	-
	3 5	SW.	4	C. S.	4
	4 5	SW.	3	C. K.	3
	6 5	-	-	-	-
	8 5	SW.	3	C. K.	9
	9 5	SW.	2	K.	10
	10 5	SW.	2	K.	10

REMARKS.

June 1. Lightning and thunder at 7.10 p. m.; rain storm at 8 p. m. Amount of rain, 0.300 inch.
2. Light rain at 10 p. m.

Hosted by Google

Day.	Hour.	WIND. Direction.	WIND. Force.	Weather	Portion cloudy	Day.	Hour	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.
1861.	h. m.					1861	h. m.					1861.	h. m.				
June 4	0 5	S.	1	C. K.	4	June 5	0 5	NE.	2	K.	10	June 6	0 5	NE.	2	N.	10
	2 5	S.	1	C. K.	6		2 5	NE.	1	K.	10		2 5	NE.	1	N.	10
	3 5	S.	1	C. K.	10		3 5	NE.	1	N.	10		3 5	N.	1	K.	10
	4 5	S.	1	C. K.	10		4 5	NE.	2	N.	10		4 5	N.	1	N.	10
	6 5	NW.	1	N.	10		6 5	NE.	3	K.	10		6 5	NW.	1	N.	10
	8 5	N. by E.	3	C. K.	10		8 5	NE.	4	N.	10		8 5	N.	1	N.	10
	9 5	N. by E.	3	C. K. N.	10		9 5	NE.	1	N.	10		9 5	N.	1	N.	10
	10 5	-	-	-	-		10 5	NE.	2	N.	10		10 5	N.	1	K. & N.	10
	Noon.	NE.	3	N.	10		Noon.	NE.	2	N.	10		Noon.	N. by E.	2	C. K.	10
	2 5	-	-	-	-		2 5	NE.	2	N.	10		2 5	-	-	-	-
	3 5	NE.	4	N.	10		3 5	NE.	3	K.	10		3 5	-	-	-	-
	4 5	NE.	1	N.	10		4 5	NE.	4	N.	10		4 5	NE.	1	K.	1
	6 5	NE.	2	K.	10		6 5	NE.	4	N.	10		6 5	NE.	1	K.	1
	8 5	NE.	1	K.	10		8 5	NE.	3	N.	10		8 5	NE	1	N.	1
	9 5	NE.	1	K.	10		9 5	NE.	3	N.	10		9 5	NE.	1	N.	1
	10 5	NE.	1	K.	10		10 5	NE.	2	K.	10		10 5	NE.	1	N.	1
June 7	0 5	NE.	1	K.	10	June 8	0 5	SE.	1	K.	10	June 9	0 5	NW.	1	K.	3
	2 5	NE.	1	Mist.	10		2 5	N.	1	K.	10		2 5	NW.	1	C.	3
	3 5	NE.	1	Mist.	10		3 5	NE.	1	C. K.	6		3 5	NW.	1	C.	1
	4 5	N.	1	K.	10		4 5	NE.	1	C. S.	4		4 5	NW.	1	C. S.	3
	6 5	N. by E.	1	K.	10		6 5	NW.	1	K.	10		6 5	-	2	C. K.	9
	8 5	NE.	2	K.	10		8 5	N.NW.	1	K.	10		8 5	N.	1	C. K.	10
	9 5	NE.	1	K.	10		9 5	N.	1	K.	10		9 5	N.	1	C. K.	7
	10 5	-	-	-	-		10 5	-	-	-	-		10 5	N.	1	C. K.	6
	Noon.	N.	1	K.	10		Noon.	S.	2	C. K.	10		Noon.	S.	1	C. K.	7
	2 5	N.	1	K.	10		2 5	NE.	2	C. K.	3		2 5	S.	1	C. K.	4
	3 5	N.	1	K.	10		3 5	S.	3	C. K.	3		3 5	SE.	1	C. K.	3
	4 5	W.	1	K.	10		4 5	SE.	1	C. K.	5		4 5	SE.	1	C. K.	2
	6 5	S.	1	K.	10		6 5	W.	1	N.	8		6 5	S.	2	C.	2
	8 5	East.	1	K. S.	10		8 5	W.	1	C.	2		8 5	S.	1	C. S.	1
	9 5	SE.	1	K.	10		9 5	W.	1	C. K.	4		9 5	S.	1	C. S.	1
	10 5	SW.	2	C. S.	2		10 5	W.	1	C.	1		10 5	SW.	1	C. K.	3
June 10	0 5	SW.	1	K.	2	June 11	0 5	S.	3	K.	10	June 12	0 5	W.	1	C.	1
	2 5	W.	1	Clear.	0		2 5	S SE.	4	K.	10		2 5	W.	1	C. S.	3
	3 5	W.	1	Clear.	0		3 5	S.SE.	3	C. K.	9		3 5	W.	1	C. S.	6
	4 5	S.	1	Clear.	0		4 5	S SE.	1	C. K.	10		4 5	W.	1	C. S.	6
	6 5	SW.	1	Clear.	0		6 5	S SE.	2	C. K.	4		6 5	W.	1	C. K.	6
	8 5	SW.	1	C. K.	6		8 5	S.	1	C. K.	8		8 5	NE.	1	C. S.	4
	9 5	SW.	2	C. K.	3		9 5	-	-	-	-		9 5	S.	1	C.	6
	10 5	S.	1	C. K.	3		10 5	S.	1	C. K.	4		10 5	W.	3	C.	8
	Noon.	S.	1	C. K.	4		Noon.	S.	1	C. K.	4		Noon.	W.	3	C. K.	9
	2 5	-	-	-	-		2 5	-	-	-	-		2 5	W.	3	C. K.	10
	3 5	-	-	-	-		3 5	S.	3	C.	3		3 5	-	-	-	-
	4 5	S.	3	C. K.	8		4 5	W.	3	C.	4		4 5	W.	1	C. K.	8
	6 5	S.	1	C. K.	9		6 5	SW.	1	C.	4		6 5	W.	1	C. K.	8
	8 5	S.	1	K.	10		8 5	SW.	1	S.	2		8 5	W.	1	C. K.	6
	9 5	S.	1	C. K.	6		9 5	SW.	1	C. S.	1		9 5	W.	1	C.	1
	10 5	S.	1	C. K.	6		10 5	SW.	1	Clear.	0		10 5	W.	1	C. K.	4

REMARKS.

June 4. Showery during the day. Lightning at midnight.
5. Raining at intervals during the day. Amount, 1.074 inch.
6. Heavy showers of rain, with lightning and thunder, until 10 a. m. Amount, 1.100 inch.
8. Heavy clouds from NE. at 6.30 p. m., with rain, hail, lightning and thunder. Amount, 1.340 inch.
11. Lightning and thunder at midnight.
12. Lightning and thunder at 5.30 p. m.

Hosted by Google

Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.
1861. June 13	h. m.				
	0 5	NW.	2	C.	2
	2 5	-	-	-	-
	3 5	NW.	3	Clear.	0
	4 5	NW.	4	Clear.	0
	6 5	NW.	4	Clear.	0
	8 5	NW.	3	Clear.	0
	9 5	NW.	2	Clear.	0
	10 5	NW.	2	C. S.	6
	Noon.	NW.	4	C. S.	2
	2 5	NW.	4	C. S.	3
	3 5	W.NW.	4	C. S.	2
	4 5	NW.	4	C. S.	3
	6 5	NW.	3	C. S.	2
	8 5	NW.	2	C. S.	2
	9 5	NW.	1	C. S.	1
	10 5	NW.	1	Clear.	0
June 16	0 5	SW.	6	C. K. N.	10
	2 5	SW.	4	C. K.	8
	3 5	S.	3	C. K.	6
	4 5	S.	2	C. K.	6
	6 5	S. by W.	2	C.	1
	8 5	S. by W.	3	C.	1
	9 5	SW.	3	C. K.	4
	10 5	SW.	4	C. K.	6
	Noon.	NW.	5	C. K.	3
	2 5	NW.	5	C. K.	2
	3 5	NW.	5	C.	1
	4 5	NW.	5	C. K.	2
	6 5	NW.	4	C. K.	3
	8 5	NW.	4	C. K.	4
	9 5	NW.	3	C. K.	9
	10 5	NW.	3	C. K.	10
June 19	0 5	S.	2	C.	1
	2 5	S.	1	C. K.	3
	3 5	S.	1	C. K.	4
	4 5	S.	1	C. K. S.	8
	6 5	S.SW.	2	C.	1
	8 5	W.	1	C.	1
	9 5	-	-	-	-
	10 5	SW.	2	C.	2
	Noon.	SE.	2	C. S.	3
	2 5	-	-	-	-
	3 5	SE.	2	C.	2
	4 5	S.	2	C.	1
	6 5	S.	3	C.	2
	8 5	S.	1	C. S.	2
	9 5	-	-	-	-
	10 5	S.SW.	1	C. S.	2

Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.
1861. June 14	h. m.				
	0 5	-	-	-	-
	2 5	NW.	2	Clear.	0
	3 5	NW.	1	Clear.	0
	4 5	NW.	1	Clear.	0
	6 5	NW.	1	Clear.	0
	8 5	NW.	1	C.	4
	9 5	N.	2	C.	8
	10 5	-	-	-	-
	Noon.	SE.	2	C.	3
	2 5	SE.	2	C. K.	2
	3 5	S.	2	C. K.	2
	4 5	S.	2	C. K.	3
	6 5	S.	1	C. K.	2
	8 5	S.	1	C.	1
	9 5	S.	1	C.	1
	10 5	S.	1	C. K.	3
June 17	0 5	NW.	3	C. K.	7
	2 5	NW.	2	K.	10
	3 5	NW.	1	K.	10
	4 5	NW.	3	K.	10
	6 5	NW.	3	N.	10
	8 5	N. by E.	4	C. K.	4
	9 5	N.	3	K.	10
	10 5	N.	3	C. K.	8
	Noon.	NE.	3	C. K.	6
	2 5	-	-	-	-
	3 5	-	-	-	-
	4 5	N.	2	C. K.	6
	6 5	N.	1	C. K.	6
	8 5	N.	1	C. K.	5
	9 5	N.	1	C. K.	8
	10 5	N.	1	C. K.	9
June 20	0 5	SW.	1	K.	10
	2 5	SW.	1	K.	10
	3 5	S.	1	K.	10
	4 5	S.	1	K.	10
	6 5	NE.	1	C K.	8
	8 5	SW.	1	C. K.	8
	9 5	SW.	1	C. K.	6
	10 5	-	-	-	-
	Noon.	NW.	3	C. K.	4
	2 5	NW.	3	C. K.	6
	3 5	-	-	-	-
	4 5	NW.	3	C. K.	6
	6 5	NW.	1	C. K.	8
	8 5	NW.	1	C. K.	9
	9 5	NW.	1	C. K.	6
	10 5	NW.	1	C. K.	7

Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.
1861. June 15	h. m.				
	0 5	S.	1	C. S.	2
	2 5	S.	2	Clear.	0
	3 5	S.	2	S.	1
	4 5	S.	2	C. S.	2
	6 5	S.	2	C.	1
	8 5	S. by W.	3	C.	3
	9 5	S. by W.	3	C.	4
	10 5	-	-	-	-
	Noon.	S.	3	C. K.	4
	2 5	S.	3	C. K.	6
	3 5	S.	3	C. K.	4
	4 5	SW.	3	C. K.	6
	6 5	S.	3	C. K.	4
	8 5	S.	3	C. K.	9
	9 5	SW.	5	C. K.	4
	10 5	SW.	3	C. K.	3
June 18	0 5	NW.	1	K.	8
	2 5	N.	1	K.	10
	3 5	N.	1	K.	10
	4 5	N.	1	K.	10
	6 5	SW.	1	K.	6
	8 5	SW.	1	C. K.	8
	9 5	SW.	2	C. K.	4
	10 5	SW.	1	C. K.	4
	Noon.	SW.	2	C. K.	4
	2 5	SE.	2	C. K.	4
	3 5	S.SE.	2	C. K.	4
	4 5	S.	1	C. K.	3
	6 5	S.	1	C.	2
	8 5	S.	1	S.	1
	9 5	S.	1	S.	1
	10 5	S.	1	C.	1
June 21	0 5	NW.	1	C. K.	6
	2 5	NW.	1	C. K.	2
	3 5	NW.	2	C. K.	2
	4 5	NE.	1	C. K.	7
	6 5	NE.	1	C. K.	8
	8 5	NE.	1	C. K.	9
	9 5	E.	1	C. K.	8
	10 5	E.	1	C. K.	9
	Noon.	S.	2	C. K.	4
	2 5	S.	3	C. K.	6
	3 5	-	-	-	-
	4 5	S.	3	C. K.	6
	6 5	S.	3	C. K.	5
	8 5	W.	1	C. S.	3
	9 5	-	-	-	-
	10 5	W.	1	Clear.	0

REMARKS.

June 16. Lightning and thunder, accompanied with a shower of rain at midnight.
17. Rain shower at 6 a. m.; not measurable.

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Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.
1861. June 22	h. m				
	0 5	SW.	1	C.	2
	2 5	NW.	6	K.	10
	3 5	NW.	4	K.	10
	4 5	W.	4	N.	10
	6 5	W.	4	C. K.	6
	8 5	NW.	4	C. K.	4
	9 5	-	-	-	-
	10 5	NW.	4	C. K.	3
	Noon.	N.	4	C. K.	8
	2 5	NW.	3	C. K.	3
	3 5	SW.	3	C. K.	2
	4 5	SW.	4	C. K.	2
	6 5	W.	2	Clear.	0
	8 5	W.	1	C.	1
	9 5	W.	1	C.	1
	10 5	W.	1	C.	2
June 25	0 5	NE.	1	C.	3
	2 5	NE.	1	C.	2
	3 5	NE.	1	C. K.	2
	4 5	NE.	2	C. K.	2
	6 5	NE.	2	C.	2
	8 5	NE.	2	C. K.	9
	9 5	E.	1	C. K.	8
	10 5	-	-	-	-
	Noon.	SE.	2	C. K.	6
	2 5	-	-	-	-
	3 5	-	-	-	-
	4 5	S. SW.	3	C. K.	8
	6 5	S. SW.	3	C. K.	8
	8 5	S.	3	C. K. S.	3
	9 5	S.	4	C. K.	2
	10 5	S.	3	C. K.	4
June 28	0 5	SW.	1	C. K.	2
	2 5	W.	1	C. S.	6
	3 5	W.	1	C. S.	4
	4 5	W.	1	C. S.	6
	6 5	W.	1	C. S.	4
	8 5	NE.	1	C. S.	6
	9 5	NE.	1	C. K.	10
	10 5	NE.	2	C. K.	10
	Noon.	NW.	2	C. K.	9
	2 5	-	-	-	-
	3 5	NW.	3	C. K.	8
	4 5	NW.	3	C. K.	8
	6 5	NE.	1	K.	10
	8 5	NE.	1	K.	10
	9 5	NE.	1	K.	10
	10 5	NE.	1	N.	10

Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.
1861 June 23	h. m.				
	0 5	NW.	1	C. K.	6
	2 5	NW.	1	C. K.	8
	3 5	NW.	1	C. K.	4
	4 5	NW.	1	C. K.	3
	6 5	NW.	2	C. K.	3
	8 5	S.	1	C. K.	6
	9 5	E.	1	C. K.	7
	10 5	SW.	1	C. K.	7
	Noon.	W.	1	C. K.	6
	2 5	W.	2	C.	2
	3 5	W.	2	C.	3
	4 5	SW.	3	C.	3
	6 5	SW.	3	C. K.	3
	8 5	NW.	1	C. K. S.	3
	9 5	-	-	-	-
	10 5	NW.	2	C. K.	6
June 26	0 5	S.	1	C. K.	8
	2 5	S.	1	K.	10
	3 5	S.	1	N.	10
	4 5	S.	2	K.	10
	6 5	S.	2	K.	10
	8 5	S.	1	K.	10
	9 5	S.	3	K.	10
	10 5	-	-	-	-
	Noon	S.	3	C. K.	6
	2 5	S.	2	C. K.	5
	3 5	S.	3	C. K.	4
	4 5	S.	3	C. K.	4
	6 5	SW.	1	C. K.	7
	8 5	SW.	1	C.	1
	9 5	SW.	1	C. S.	3
	10 5	SW.	1	C. K.	10
June 29	0 5	SW.	1	K.	10
	2 5	SW.	2	K.	10
	3 5	N.	1	K.	10
	4 5	N.	1	K.	10
	6 5	NW.	1	N.	10
	8 5	N.	2	C. K.	9
	9 5	NE.	3	C. K.	7
	10 5	N.	2	C. K.	8
	Noon.	NE.	4	C. K.	4
	2 5	E.	2	C. K.	4
	3 5	E.	3	C.	2
	4 5	E.	2	C.	1
	6 5	SE.	2	C. K.	8
	8 5	SE.	1	C. K. S.	3
	9 5	SW.	1	C. K. S.	6
	10 5	SW.	1	C. K. S.	4

Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.
1861. June 24	h. m.				
	0 5	NW.	3	C. K.	8
	2 5	NW.	3	C. K.	6
	3 5	NW.	4	C. K.	6
	4 5	NW.	2	C. K.	8
	6 5	NW.	2	C.	2
	8 5	N.	3	C. K.	8
	9 5	N. by E.	2	C. K.	7
	10 5	NW.	2	C. K.	7
	Noon.	NW.	3	C. K.	5
	2 5	W.	3	C. K.	5
	3 5	SW.	3	C. K.	4
	4 5	SW.	1	C.	4
	6 5	SW.	1	C. S.	3
	8 5	W.	1	C.	2
	9 5	W.	1	C.	1
	10 5	W.	1	Clear.	0
June 27	0 5	W.	1	C. K.	10
	2 5	NW.	1	C. K.	3
	3 5	NW.	1	C.	1
	4 5	NW.	2	C. K.	4
	6 5	NW.	2	C. K.	2
	8 5	NW.	3	C. K.	1
	9 5	NW.	2	C.	1
	10 5	-	-	-	-
	Noon.	NW.	2	Clear.	0
	2 5	-	-	-	-
	3 5	-	-	-	-
	4 5	SW.	2	Clear.	0
	6 5	SW.	1	Clear.	0
	8 5	SW.	1	C. K. S.	4
	9 5	NW.	1	C. S.	2
	10 5	NW.	1	C.	1
June 30	0 5	N.	1	C. K.	6
	2 5	NE.	1	C. K.	6
	3 5	NE.	1	C. K.	8
	4 5	NE.	1	C. K.	10
	6 5	NE.	1	K.	10
	8 5	SE.	1	K.	10
	9 5	SE.	2	K.	10
	10 5	S.	1	N.	10
	Noon.	S. SW.	1	N.	10
	2 5	SE.	1	N.	10
	3 5	SE.	1	N.	10
	4 5	NE.	3	C. K.	9
	6 5	N.	1	C. K.	10
	8 5	N.	1	C. S.	2
	9 5	NW.	1	C. S.	2
	10 5	N.	1	K.	10

REMARKS.

June 26. Light showers at 3 and 11.45 a. m. and 4.45 p. m., with lightning and thunder. Rainbow to SE. at 6.30 p. m. Amount of rain, 0.100 inch.
28. Shower at 9.40 p. m., not measurable.
29. Shower at 5 a. m. Amount gauged, 0.020 inch.
30. Raining at 11.30 a. m. The comet distinctly visible at 7.45 p. m.

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Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy
1861. July 1	h. m. 0 5	N.	1	K.	10
	2 5	N.	1	K.	10
	3 5	N.	1	K.	10
	4 5	N.	1	K.	10
	6 5	N.	1	K.	10
	8 5	N.	1	K.	10
	9 5	N.	1	K.	10
	10 5	N.	1	N.	10
	Noon	NW.	1	K.	10
	2 5	S.	1	K.	10
	3 5	-	-	-	-
	4 5	NE.	1	K.	10
	6 5	NE.	3	K.	10
	8 5	NW.	4	N.	10
	9 5	NW.	3	K.	10
	10 5	NW.	2	K.	6
July 4	0 5	NW.	1	C.	1
	2 5	NW.	1	Clear.	0
	3 5	N.	1	Clear.	0
	4 5	SW.	1	Clear.	0
	6 5	SW.	1	C. S.	4
	8 5	SW.	1	C. S.	4
	9 5	SE.	1	C.	6
	10 5	SE.	1	C. K.	7
	Noon.	S.	2	C. K.	8
	2 5	S.	2	C.	7
	3 5	S.	2	C. K.	6
	4 5	S. SE.	2	C. K.	4
	6 5	-	-	-	-
	8 5	-	-	-	-
	9 5	S.	1	C.	1
	10 5	S.	1	Clear.	0
July 7	0 5	S.	1	N.	10
	2 5	S.	1	N.	10
	3 5	S.	1	K.	10
	4 5	S.	1	K.	8
	6 5	W.	1	K.	6
	8 5	NW.	1	C. K.	4
	9 5	W.	2	C.	2
	10 5	W.	1	C. K.	4
	Noon.	W.	1	C. K.	4
	2 5	W.	2	C. K.	6
	3 5	NW.	1	C. K.	5
	4 5	NW.	1	C. K.	4
	6 5	NW.	1	C. K.	3
	8 5	SW.	1	C. S.	2
	9 5	SW.	1	Clear.	0
	10 5	SW.	1	Clear.	0

Day.	Hour.	WIND. Direction.	WIND. Force.	Weather	Portion cloudy
1861. July 2	h. m. 0 5	NW.	4	C. K.	9
	2 5	W.	4	C. K.	8
	3 5	W.	3	C. K.	6
	4 5	W.	2	C. S.	4
	6 5	W.	4	Clear.	0
	8 5	NW.	4	C.	1
	9 5	NW.	6	C. K.	3
	10 5	NW.	6	C. K.	3
	Noon.	W.	6	C. K.	4
	2 5	NW.	4	C. K.	4
	3 5	-	-	-	-
	4 5	NW.	4	C.	2
	6 5	-	-	-	-
	8 5	NW.	3	C. K.	6
	9 5	-	-	-	-
	10 5	NW.	1	C. S.	2
July 5	0 5	S.	1	S.	1
	2 5	S.	1	S.	1
	3 5	W.	1	S.	1
	4 5	W.	1	S.	1
	6 5	W.	1	C. K.	4
	8 5	S.	1	C. K.	3
	9 5	SE.	1	C. K.	4
	10 5	-	-	-	-
	Noon.	SE.	2	C. K.	5
	2 5	S.	3	C. S.	2
	3 5	SE.	2	C. S.	4
	4 5	SE.	2	C. S.	3
	6 5	S.	3	C. K.	4
	8 5	S.	1	C. K.	10
	9 5	W.	2	K.	10
	10 5	SW.	3	C. K.	10
July 8	0 5	SW.	1	Clear.	0
	2 5	W.	1	C.	1
	3 5	W.	1	C.	2
	4 5	W.	1	C.	3
	6 5	W.	1	C. S.	6
	8 5	NW.	1	C.	3
	9 5	-	-	-	-
	10 5	-	-	-	-
	Noon.	NW.	3	C. K.	4
	2 5	NW.	2	C. K.	4
	3 5	W.	2	C. K.	8
	4 5	W.	2	C. K.	10
	6 5	W.	2	K.	8
	8 5	SE.	1	C. S.	4
	9 5	SE.	1	S.	1
	10 5	W.	1	S.	1

Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy
1861. July 3	h m 0 5	NW.	1	C.	1
	2 5	NW.	1	C. K. S.	4
	3 5	NW.	1	C. K. S.	4
	4 5	N.	1	C. S.	6
	6 5	W.	2	C. K.	8
	8 5	NW.	3	C. K.	6
	9 5	NW.	3	C.	2
	10 5	NW.	4	C.	2
	Noon.	NW.	2	Clear.	0
	2 5	-	-	-	-
	3 5	W.	2	Clear.	0
	4 5	NW.	2	C.	2
	6 5	NW.	2	C.	2
	8 5	NW.	1	K. S.	2
	9 5	NW.	1	Clear.	0
	10 5	NW.	1	Clear.	0
July 6	0 5	SW.	1	C. K.	10
	2 5	S.	1	C. K.	8
	3 5	S.	1	C. K.	10
	4 5	S.	1	C. K.	10
	6 5	S.	1	C. K.	10
	8 5	S. SE.	1	N.	10
	9 5	-	-	-	-
	10 5	SE.	1	C. K.	10
	Noon.	S.	2	C. K. N.	10
	2 5	-	-	-	-
	3 5	S.	1	N.	10
	4 5	S.	1	K.	10
	6 5	S.	1	C. K.	6
	8 5	S.	1	C. K.	6
	9 5	S.	1	C. K.	4
	10 5	S.	1	C. K.	6
July 9	0 5	W.	1	C.	1
	2 5	W.	1	C.	1
	3 5	W.	1	S.	1
	4 5	W.	1	S.	1
	6 5	W.	1	C.	1
	8 5	NW.	1	C. S.	4
	9 5	W.	1	C.	2
	10 5	-	-	-	-
	Noon.	S.	1	C. K.	3
	2 5	-	-	-	-
	3 5	S.	1	C. K.	4
	4 5	S.	3	C. K.	4
	6 5	NW.	6	N.	10
	8 5	NW.	1	N.	10
	9 5	NW.	1	K.	9
	10 5	NW.	1	C. K.	4

REMARKS.

July 1. Commenced raining at 10 a. m. and 6 p. m., with lightning and thunder. Amount, 1. 010 inch.
6. Light showers at 8 a. m., at noon, and at 9. 20 p. m., with lightning and thunder.
9. Thunder at 4. 20 p. m.; rain at 5. 15. Amount, 0. 950 inch.

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Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy	Day.	Hour.	WIND. Direction.	WIND. Force	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction	WIND. Force.	Weather.	Portion cloudy.
1861. July 10	h. m. 0 5	W.	1	C. S.	2	1861. July 11	h. m. 0 5	S.	2	C. K.	4	1861. July 12	h. m. 0 5	W.	1	C. S.	2
	2 5	NW.	2	C. S.	4		2 5	S.	2	C. K.	6		2 5	W.	1	C.	1
	3 5	NW.	2	C. S.	4		3 5	S.	1	K.	10		3 5	NW.	1	Clear.	0
	4 5	NW.	2	C. S.	3		4 5	W.	1	C K.	9		4 5	NW.	1	Clear.	0
	6 5	NW.	2	C. S.	3		6 5	NW.	1	C. K.	3		6 5	NW.	1	Clear.	0
	8 5	NW.	3	C. S.	2		8 5	NW.	3	C.	1		8 5	NW.	1	Clear.	0
	9 5	NW.	3	C. K.	3		9 5	NW.	4	C. K.	4		9 5	NW.	3	Clear.	0
	10 5	-	-	-	.		10 5	-	-	-	-		10 5	-	-	-	-
	Noon.	SE.	2	C. K.	4		Noon	NW.	2	C. K.	5		Noon.	W.	2	C. K.	2
	2 5	-	-	-	-		2 5	-	-	-	-		2 5	NW.	3	C. K.	2
	3 5	SE.	2	C. K.	6		3 5	NW.	3	C. K.	4		3 5	N.	1	C. K.	2
	4 5	S.	2	C. K.	5		4 5	NW.	1	C. K.	9		4 5	SW.	1	C. K.	3
	6 5	W.	7	K.	10		6 5	SW.	2	N.	10		6 5	SE	1	C.	1
	8 5	NW.	2	N.	10		8 5	NW.	2	C. S.	2		8 5	S.	1	C. S.	2
	9 5	NW.	1	N.	10		9 5	NW.	2	C. S.	2		9 5	SW.	1	C. S	2
	10 5	NW.	1	K.	10		10 5	NW.	1	C.	1		10 5	W.	1	C. S.	2
July 13	0 5	N.	1	C.	2	July 14	0 5	NW.	3	C. K.	9	July 15	0 5	NW.	1	Clear.	0
	2 5	W.	2	K.	9		2 5	NW.	3	S.	1		2 5	NW.	1	Clear.	0
	3 5	W.	1	C. K.	6		3 5	NW.	3	C. K.	4		3 5	NW.	1	Clear.	0
	4 5	N.	1	C. K.	9		4 5	NW.	2	C. K.	8		4 5	NW.	1	S.	1
	6 5	NE.	2	N.	10		6 5	NW.	3	C. K.	5		6 5	NW.	1	C. S.	2
	8 5	NE.	2	K.	10		8 5	NW.	3	C. K.	10		8 5	W.	1	C. S.	3
	9 5	NE.	2	N.	10		9 5	NW.	3	C. K.	10		9 5	W.	2	C. K.	8
	10 5	-	-	-	-		10 5	NW.	3	C. K.	7		10 5	-	-	-	-
	Noon.	SE.	1	K.	8		Noon.	NW.	3	C. K.	6		Noon.	W.	2	C. K.	7
	2 5	SE.	1	C.	2		2 5	NW.	4	C. K.	8		2 5	-	-	-	-
	3 5	SE.	2	C. K.	4		3 5	NW.	3	C. K.	8		3 5	NW.	1	C. K.	10
	4 5	SE.	1	C. K.	8		4 5	NW.	4	N.	9		4 5	NW.	1	C. K.	10
	6 5	SE.	3	C. K.	9		6 5	-	-	-	-		6 5	W.	1	N.	10
	8 5	NW.	3	C. K. S.	9		8 5	NE.	1	K.	10		8 5	SW.	1	C. K. S.	10
	9 5	NW.	2	K.	9		9 5	NW.	1	C. S.	2		9 5	SW.	4	C. K.	10
	10 5	NW.	2	K.	8		10 5	NW.	1	S.	1		10 5	SW.	1	K.	10
July 16	0 5	SW.	1	K.	10	July 17	0 5	SW.	1	C. K.	4	July 18	0 5	SW.	1	C. K.	4
	2 5	S.	1	K.	10		2 5	SW.	1	C.	1		2 5	SW.	1	C. S.	4
	3 5	S.	1	K.	10		3 5	SW.	1	Clear.	0		3 5	SW.	1	C. S.	3
	4 5	S.	1	K.	10		4 5	SW.	1	Clear.	0		4 5	SW.	1	C.	2
	6 5	S.	1	C. K.	7		6 5	SW.	1	Clear.	0		6 5	S.	1	C.	4
	8 5	S.	1	C. K.	5		8 5	NW.	2	C. S.	3		8 5	SE.	1	C. K.	6
	9 5	S.	2	C. K.	5		9 5	N.	1	C. S.	2		9 5	S.	1	C. K.	10
	10 5	S.	3	C. K.	5		10 5	N.	1	C.	2		10 5	S.	1	C. K.	9
	Noon.	S.	3	K.	10		Noon.	SW.	1	C. K.	4		Noon.	S.	1	C. K.	4
	2 5	-	-	-	-		2 5	-	-	-	-		2 5	-	-	-	-
	3 5	S. by W.	3	C. K.	10		3 5	-	-	-	-		3 5	S.SW.	1	C. K.	10
	4 5	S.	2	C. K.	9		4 5	S.	1	C. K.	3		4 5	S.SW.	1	C. K.	9
	6 5	S.	2	C. K.	10		6 5	S.	3	C. K.	2		6 5	-	-	-	-
	8 5	S.	1	C. K.	4		8 5	S.	1	C. S.	4		8 5	SE.	1	K.	10
	9 5	S.	1	C. S.	4		9 5	S.	1	C. S.	3		9 5	SE.	1	K.	10
	10 5	S.	1	C.	2		10 5	S.	1	C. K.	3		10 5	SE.	1	K.	10

REMARKS.

July 10. Commenced raining at 6.15 p. m., with lightning and thunder. Amount, 0.700 inch.
11. Raining at 5 p. m., with lightning and thunder. Amount of rain, 0.100 inch.
12. Lightning at 8, 9, and 10 p. m.
13. Rain, with lightning and thunder, at intervals during the morning. Amount, 0.370 inch.
14. Light shower at 11 a. m. Rain, with lightning and thunder, at 5 p. m. Rainbow in the east.
15. Light showers at 3 and 5 p. m. Not measurable.

Hosted by Google

Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.
1861. July 19	h. m.				
	0 5	S.	1	K.	10
	2 5	SE.	1	K.	10
	3 5	SE.	2	K.	10
	4 5	SE.	3	K.	10
	6 5	SE.	1	K.	10
	8 5	SE.	2	K.	10
	9 5	SE.	1	K.	10
	10 5	-	-	-	-
	Noon.	SE.	1	C. K.	9
	2 5	-	-	-	-
	3 5	-	-	-	-
	4 5	S SE.	2	C. K.	8
	6 5	SE.	1	C. K.	10
	8 5	SE.	3	C. K. S.	10
	9 5	SE.	1	C. K.	10
	10 5	SE.	3	C. K.	10
July 22	0 5	N.NW.	1	K.	10
	2 5	NW.	1	K.	10
	3 5	W.	1	N.	10
	4 5	N.	1	N.	10
	6 5	N.	1	N.	10
	8 5	N.	1	N.	10
	9 5	NE.	1	N.	10
	10 5	NE.	2	N.	10
	Noon.	-	-	-	-
	2 5	-	-	-	-
	3 5	NE.	1	N.	10
	4 5	NE.	1	N.	10
	6 5	NE.	1	N.	10
	8 5	NE.	1	N.	10
	9 5	NE.	1	N.	10
	10 5	NE.	1	N.	10
July 25	0 5	N.W.	1	Clear.	0
	2 5	N.W.	1	Clear.	0
	3 5	N.W.	1	Clear.	0
	4 5	N.W.	2	S.	1
	6 5	N.W.	3	Clear.	0
	8 5	N.W.	2	Clear.	0
	9 5	N.W.	1	Clear.	0
	10 5	N.	1	Clear.	0
	Noon.	N.	2	C.	2
	2 5	-	-	-	-
	3 5	N.	2	C. K.	6
	4 5	E.	1	C. K.	4
	6 5	E.	1	C. K.	2
	8 5	N.	1	Clear.	0
	9 5	N.	1	Clear.	0
	10 5	-	-	-	-

Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.
1861. July 20	h. m.				
	0 5	SW.	1	N.	10
	2 5	N.	1	K.	10
	3 5	NE.	1	N.	10
	4 5	NE.	1	K.	10
	6 5	S.	1	K.	9
	8 5	SW.	1	C. K.	6
	9 5	SW.	3	C. K.	8
	10 5	SW.	3	C. K.	6
	Noon.	-	-	-	-
	2 5	NW.	4	C. K.	4
	3 5	NW.	4	C. K.	3
	4 5	NW.	5	C. K.	2
	6 5	W.	3	C. K.	4
	8 5	NW.	2	S.	1
	9 5	NW.	2	Clear.	0
	10 5	NW.	4	C.	1
July 23	0 5	N.	1	N.	10
	2 5	N.	1	N.	10
	3 5	N.	1	K.	6
	4 5	N.	1	K.	6
	6 5	NW.	3	C. K.	4
	8 5	N.NW.	3	C.	4
	9 5	NW.	3	C.	1
	10 5	NW.	3	C. S.	4
	Noon.	NW.	2	C. K.	5
	2 5	NW.	2	C. K.	4
	3 5	N.NW.	2	C. K.	6
	4 5	N.	1	C. K.	4
	6 5	N.	1	C. K.	4
	8 5	NW.	1	C. S.	3
	9 5	NW.	1	Clear.	0
	10 5	NW.	1	Clear.	0
July 26	0 5	SW.	1	C. K.	6
	2 5	SW.	1	C. K.	8
	3 5	N.	1	C.	4
	4 5	N.	1	C. S.	4
	6 5	N.	1	C. S.	2
	8 5	N.	1	Hazy.	-
	9 5	N.	1	Hazy.	-
	10 5	-	-	-	-
	Noon.	SW.	1	Hazy.	-
	2 5	-	-	-	-
	3 5	S.	1	C. K.	4
	4 5	S.	1	C.	2
	6 5	S.	1	C. S.	2
	8 5	S.	1	K.	10
	9 5	S.	1	K.	10
	10 5	S.	2	S.	4

Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.
1861 July 21	h. m.				
	0 5	NW.	2	C. S.	4
	2 5	NW.	3	C. K.	6
	3 5	NW.	3	C. K.	8
	4 5	NW.	1	C. K.	6
	6 5	NW.	1	C. K.	4
	8 5	NW.	3	C. K.	5
	9 5	NW.	2	C.	2
	10 5	-	-	-	-
	Noon	W.	1	C. K.	5
	2 5	W.	3	C. K.	6
	3 5	W.	1	C. K.	8
	4 5	NW.	1	C. K.	4
	6 5	N. by W.	1	C. K.	4
	8 5	N. by W.	1	C. K.	9
	9 5	NW.	1	C. K. S.	10
	10 5	NW.	1	C. K.	10
July 24	0 5	NW.	1	C. S.	1
	2 5	NW.	1	C.	2
	3 5	NW.	1	C.	1
	4 5	NW.	1	Clear.	0
	6 5	NW.	1	C.	1
	8 5	NW.	1	C.	1
	9 5	NW.	3	C.	1
	10 5	N.	3	K.	1
	Noon.	E.	3	C. K.	4
	2 5	-	-	-	-
	3 5	-	-	-	-
	4 5	N.	1	C. K.	3
	6 5	-	-	-	-
	8 5	N.	1	C.	1
	9 5	N.	1	C.	3
	10 5	NW.	2	C.	2
July 27	0 5	-	-	-	-
	2 5	N.NW.	1	C. K.	5
	3 5	N NW.	1	C. K.	3
	4 5	NW.	1	S.	1
	6 5	NW.	1	C. K.	6
	8 5	SW.	1	C. K.	8
	9 5	SW.	1	C. K.	10
	10 5	S.	1	C. K.	10
	Noon.	S.	1	C. K.	10
	2 5	-	-	-	-
	3 5	S.	1	C. K.	6
	4 5	SW.	1	C.	4
	6 5	SW.	1	C. K.	8
	8 5	SW.	2	C. K. S.	6
	9 5	NW.	1	S.	1
	10 5	W.	1	C. K.	10

REMARKS.

July 20. Light showers in the morning; not measurable.
22. Began raining at 3 a. m.
23. Ceased raining at 2. 30 a. m. Amount of rain during the storm, 1. 290 inch.

Hosted by Google

Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.
1861. July 28	h. m				
	0 5	N.	1	K.	9
	2 5	W.	1	Clear.	0
	3 5	NW.	1	Clear.	0
	4 5	N.	1	C.	1
	6 5	N.	1	C.	2
	8 5	S. by W.	1	K.	10
	9 5	S.	1	C. K.	8
	10 5	SW.	3	C. K.	6
	Noon.	S.SW.	3	C. K.	6
	2 5	-	-	-	-
	3 5	S.SE.	3	C. K.	3
	4 5	S.SE.	3	C. K.	6
	6 5	SW.	1	C. K.	9
	8 5	NE.	1	C. K.	10
	9 5	NE.	1	C. S.	4
	10 5	NE.	1	C. K.	6
July 31	0 5	NW.	1	C. K.	3
	2 5	NW.	1	Clear.	0
	3 5	SW.	1	C. K.	2
	4 5	SW.	1	C. K.	2
	6 5	S.	1	C.	10
	8 5	W.	1	C.	3
	9 5	W.	1	C. S.	4
	10 5	W.	2	C. S.	2
	Noon.	SW.	1	C. S.	4
	2 5	-	-	-	-
	3 5	-	-	-	-
	4 5	SW.	1	C. S.	4
	6 5	SW.	1	C. K.	10
	8 5	S.	1	C. K. S.	8
	9 5	SW.	1	C. K. S.	6
	10 5	SW.	2	C. K. S.	8
Aug. 1	0 5	NW.	1	C. K.	4
	2 5	W.	1	C.	6
	3 5	W.	1	C. K.	8
	4 5	W.	1	K.	10
	6 5	NE.	1	N.	10
	8 5	E.	1	N.	10
	9 5	NE.	2	N.	10
	10 5	SE.	1	N.	10
	Noon.	S.	1	C. K.	8
	2 5	S.	1	C. K.	6
	3 5	N.NE.	1	C. K.	4
	4 5	N.NE.	3	C. K.	4
	6 5	S.	1	C. K.	4
	8 5	S.	1	C.	2
	9 5	Calm.	0	C.	1
	10 5	Calm.	0	Clear.	0

Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.
1861. July 29	h. m				
	0 5	N.	1	C. K.	8
	2 5	N.	1	C. K.	8
	3 5	N.	1	C. K.	4
	4 5	SW.	2	C. K. S.	10
	6 5	SW.	1	K.	10
	8 5	S.	1	K.	10
	9 5	S.	1	K.	10
	10 5	-	-	-	-
	Noon.	S.	1	C. K.	7
	2 5	S.	1	C. K.	6
	3 5	-	-	-	-
	4 5	SW.	3	K. N.	10
	6 5	SW.	2	C. K.	4
	8 5	SW.	1	C. K.	9
	9 5	NE.	4	K.	10
	10 5	NE.	1	K.	10
Aug. 2	0 5	W.	1	Clear.	0
	2 5	NW.	1	Clear.	0
	3 5	NW.	1	Clear.	0
	4 5	NW.	1	C. S.	1
	6 5	-	-	-	-
	8 5	NE.	3	C.	2
	9 5	NE.	3	C. K.	9
	10 5	SE.	1	C. K.	5
	Noon.	-	-	-	-
	2 5	SE.	1	C. K.	4
	3 5	E.	1	C.	2
	4 5	E. SE.	1	C. K.	2
	6 5	SE.	1	C.	1
	8 5	SE.	3	S.	1
	9 5	SE.	2	C. S.	2
	10 5	SE	1	C.	1

Day.	Hour.	Wind. Weather.	Wind. Force.	Weather.	Portion cloudy.
1861. July 30	h. m.				
	0 5	NW.	1	C. K.	8
	2 5	NW.	1	C. K.	6
	3 5	NW.	1	C.	2
	4 5	NW.	1	Clear.	0
	6 5	-	-	-	-
	8 5	NW.	2	C.	2
	9 5	NW.	2	Clear.	0
	10 5	NW.	1	Clear.	0
	Noon.	SW.	2	C. K.	3
	2 5	-	-	-	-
	3 5	SW.	2	C. K.	4
	4 5	-	-	-	-
	6 5	S.	1	C. K.	4
	8 5	S.	1	C. S.	4
	9 5	SW.	1	C. S.	2
	10 5	SW.	1	C. S.	3
Aug. 3	0 5	W.	1	Clear.	0
	2 5	SW.	1	Clear.	0
	3 5	S.	1	C.	2
	4 5	S.	1	C. K.	8
	6 5	S.	1	C. K.	10
	8 5	S.	1	K.	10
	9 5	S.	1	K.	10
	10 5	S.SE.	2	C. K.	6
	Noon.	SE.	1	C. K.	6
	2 5	-	-	-	-
	3 5	-	-	-	-
	4 5	S.	2	C.	2
	6 5	S.	1	C.	1
	8 5	S.	3	C. S.	4
	9 5	SE.	2	C.	2
	10 5	SE.	2	C.	1

REMARKS.

July 28. Heavy shower of rain at 5.40 p. m., accompanied with lightning and thunder. Amount, 0.560 inch.
29. Thunder showers at 3.20 and 7.20 p. m. Amount of rain, 0.070 inch.
31. Lightning and thunder, at intervals, all the evening.
Aug. 1. Commenced raining at 4.30 a. m., with lightning and thunder. Amount of rain, 1.600 inch.

Hosted by Google

Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.
1861. Aug. 4	h. m. 0 5	SW.	1	C. S.	1
	2 5	N.	1	Clear.	0
	3 5	N.	1	Clear.	0
	4 5	SW.	1	C. S.	2
	6 5	S.	1	C. K.	1
	8 5	S.	2	C. S.	1
	9 5	SE.	1	Clear.	0
	10 5	SE.	2	Clear.	0
	Noon.	SE.	2	C. K.	4
	2 5	S.	3	C. K.	3
	3 5	S.	3	C. K.	4
	4 5	S.	3	C. K.	2
	6 5	-	-	-	-
	8 5	S.	3	S.	1
	9 5	S.	3	Clear.	0
	10 5	S.	3	Clear.	0
Aug. 7	0 5	NW.	1	C. S.	2
	2 5	N.	1	C. K.	6
	3 5	N.	1	C. K.	10
	4 5	NE.	1	K.	10
	6 5	N.	1	K.	10
	8 5	N. NE.	1	C. K.	7
	9 5	SE.	1	C. K.	6
	10 5	-	-	-	-
	Noon.	S. by E.	1	C. K.	7
	2 5	-	-	-	-
	3 5	-	-	-	-
	4 5	-	-	-	-
	6 5	E.	2	C. K.	3
	8 5	E.	1	C. K.	8
	9 5	E.	1	C. K.	10
	10 5	E.	1	N.	10
Aug. 10	0 5	W.	1	C. K.	4
	2 5	W.	1	C. K.	6
	3 5	W.	1	C. K.	10
	4 5	NW.	1	C. K.	10
	6 5	SW.	1	C. K.	9
	8 5	NW.	1	C. K.	6
	9 5	NW.	1	C.	4
	10 5	-	-	-	-
	Noon.	NW.	1	C. K.	6
	2 5	NW.	1	C. K.	4
	3 5	W. SW.	1	C. K.	4
	4 5	W. SW.	1	C. K.	6
	6 5	S.	1	C. K. S.	8
	8 5	S.	1	C. K. S.	10
	9 5	S.	1	N.	10
	10 5	S.	1	K.	6

Day.	Hour	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.
1861. Aug. 5	h. m. 0 5	S.	1	Clear.	0
	2 5	S.	1	Clear.	0
	3 5	S.	1	Clear.	0
	4 5	S.	1	Clear.	0
	6 5	S.	1	S	1
	8 5	S.	1	Clear.	0
	9 5	S.	2	C. S.	2
	10 5	-	-	-	-
	Noon.	SW.	3	C. K.	7
	2 5	-	-	-	-
	3 5	SW.	2	C. K.	4
	4 5	SW.	3	C. K.	8
	6 5	NW.	2	N.	9
	8 5	SW.	1	C. K. S.	10
	9 5	SW.	1	C. K.	3
	10 5	SW.	1	N.	10
Aug. 8	0 5	N.	1	C.	1
	2 5	N.	1	K.	2
	3 5	N.	1	K.	1
	4 5	N.	1	K.	2
	6 5	S.	1	C. K.	8
	8 5	W.	1	C. K.	9
	9 5	NW.	1	C. K.	6
	10 5	-	-	-	-
	Noon.	S.	1	C. K.	4
	2 5	S.	1	C. K.	3
	3 5	S.	1	C. K.	3
	4 5	S.	1	C.	2
	6 5	S.	1	C. K.	8
	8 5	S.	1	C. K. S.	10
	9 5	S.	1	C. K. S.	6
	10 5	S.	1	C. K. S.	7
Aug. 11	0 5	SW.	1	K.	8
	2 5	W.	1	C. K.	6
	3 5	W.	1	C. K.	8
	4 5	W.	1	C. K.	8
	6 5	W.	1	C. K.	8
	8 5	NW.	2	C. K.	6
	9 5	N. by E.	1	C. K.	8
	10 5	N. by E.	2	C. K.	9
	Noon.	N. by E.	1	C. K. S.	8
	2 5	N.	1	C. K.	10
	3 5	E. SE.	1	C. K.	10
	4 5	E.	1	C. K.	9
	6 5	NE.	1	N.	10
	8 5	W.	1	N.	10
	9 5	W.	1	N.	10
	10 5	W.	1	N.	10

Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.
1861. Aug. 6	h. m. 0 5	S.	1	K.	2
	2 5	SW.	1	C. K.	3
	3 5	NW.	1	C. K.	4
	4 5	NW.	1	C. K. S.	4
	6 5	NW.	3	C. K.	6
	8 5	NW.	2	C. K.	9
	9 5	NW.	1	C. S.	2
	10 5	NW.	1	C. K.	4
	Noon.	NW.	1	C. K.	4
	2 5	NW.	1	C.	1
	3 5	NW.	1	C.	1
	4 5	NW.	1	C.	1
	6 5	N. by E.	1	C.	1
	8 5	N. by E.	1	C. S.	2
	9 5	N. by E.	1	C.	1
	10 5	N.	1	Clear.	0
Aug. 9	0 5	NE.	1	C.	4
	2 5	NE.	1	C. K.	8
	3 5	NE.	1	K.	10
	4 5	NE.	1	K.	10
	6 5	NE.	1	K.	10
	8 5	NE.	2	K.	10
	9 5	NE.	1	K.	10
	10 5	NE.	1	C. K.	10
	Noon.	NE.	1	C. K.	9
	2 5	E.	1	C. K.	9
	3 5	E.	1	C. K.	9
	4 5	E.	1	C. K.	10
	6 5	W.	1	N.	10
	8 5	NE.	1	N.	10
	9 5	NE.	1	N.	10
	10 5	NE.	1	K.	10
Aug. 12	0 5	Calm.	0	N.	10
	2 5	NE.	1	N.	10
	3 5	NE.	1	K.	10
	4 5	NE.	1	K.	10
	6 5	N.	3	K.	10
	8 5	NE.	1	K.	10
	9 5	NE.	2	K.	10
	10 5	NE.	2	K.	10
	Noon.	-	-	-	-
	2 5	NE.	2	N.	10
	3 5	NE.	3	K.	10
	4 5	NE.	3	K. N.	9
	6 5	NE.	3	N.	10
	8 5	NE.	2	C. K. S.	6
	9 5	NE.	2	C. K.	9
	10 5	NE.	1	C. K.	6

REMARKS.

August 5. Showery from 6 to 10 p. m. Amount of rain, 0. 150 inch.
7. Shower at 10 p. m.; lightning throughout the night. Amount of rain, 0. 010 inch.
8. Lightning at 8, 9, 10, and 11 p. m.
9. Lightning up to 3 a. m.; raining at 5. 25, with lightning and thunder. Amount, 0. 350 inch.
10 Lightning during the evening; light shower at 8. 45 p m.; not measurable.
11. Dry thermometer at 1 p m, 96°.5; raining, with lightning and thunder, all the evening. Amount, 2. 660 inches.
12. Rain at intervals during the day. Amount of rain, 0. 330 inch.

Hosted by Google

Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy
1861. Aug. 13	h. m. 0 5	NW.	1	K.	2
	2 5	S.	1	C.	1
	3 5	S.	2	C. S.	4
	4 5	S.	2	C. S.	4
	6 5	S.	3	C. K. S.	7
	8 5	SW.	4	N.	10
	9 5	-	-	-	-
	10 5	-	-	-	-
	Noon.	S.	3	C. K.	8
	2 5	-	-	-	-
	3 5	-	-	-	-
	4 5	-	-	-	-
	6 5	N.	4	K.	10
	8 5	NE.	2	N.	10
	9 5	NE.	4	K.	10
	10 5	N.	4	C. K.	8
Aug. 16	0 5	N.	1	C. K.	3
	2 5	N.	1	Clear.	0
	3 5	N.	1	Clear.	0
	4 5	N.	1	C. K.	3
	6 5	N.	1	C. K.	8
	8 5	NE.	2	C. K S.	7
	9 5	NE.	2	C. K.	4
	10 5	-	-	-	-
	Noon.	NE.	2	C. K.	10
	2 5	SE.	2	N.	10
	3 5	NE.	1	N.	10
	4 5	NE.	1	N.	10
	6 5	NE.	2	N.	10
	8 5	N.	1	N.	10
	9 5	N.	2	N.	10
	10 5	N.	2	K.	10
Aug. 19	0 5	N.	1	N.	10
	2 5	NE.	1	N.	10
	3 5	SE.	1	N.	10
	4 5	SE.	1	N.	10
	6 5	SE.	1	Foggy.	10
	8 5	E.	1	N.	10
	9 5	E.	1	K.	10
	10 5	E.	1	K. N.	10
	Noon.	E.	2	N.	10
	2 5	N. by E.	1	N.	10
	3 5	E.	1	N.	10
	4 5	NE.	1	K.	10
	6 5	NE.	1	K.	10
	8 5	NE.	1	N.	10
	9 5	NE.	1	N.	10
	10 5	NE.	1	N.	10

Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.
1861. Aug. 14	h. m. 0 5	NE.	3	C. K.	6
	2 5	N.	4	K.	9
	3 5	N.	4	K.	8
	4 5	N.	3	K.	10
	6 5	N.	3	K.	9
	8 5	N.	3	K.	10
	9 5	NE.	3	K.	10
	10 5	-	-	-	-
	Noon.	-	-	-	-
	2 5	-	-	-	-
	3 5	N.	2	K.	10
	4 5	N.	1	K.	10
	6 5	N.	2	K.	10
	8 5	N.	1	K.	9
	9 5	N.	1	K. S.	2
	10 5	N.	1	Clear.	0
Aug. 17	0 5	N.	1	K.	10
	2 5	NE.	1	K.	10
	3 5	NE.	1	N.	10
	4 5	NE.	1	N.	10
	6 5	N.	1	N.	10
	8 5	N.	1	N.	10
	9 5	N.	1	N.	10
	10 5	-	-	-	-
	Noon.	N.	1	N.	10
	2 5	N.NW.	2	K.	10
	3 5	N. by E.	3	K.	10
	4 5	NE.	2	K.	10
	6 5	N.	1	K.	10
	8 5	N.	1	K.	10
	9 5	N.	1	K.	10
	10 5	N.	1	K.	10
Aug. 20	0 5	NE.	1	N.	10
	2 5	NE.	2	N.	10
	3 5	NE.	3	K. N.	10
	4 5	NE.	2	K.	10
	6 5	NE.	3	K.	9
	8 5	N.NE.	3	K.	9
	9 5	NE.	2	K.	10
	10 5	NE.	3	K.	10
	Noon.	NE.	3	C. K.	9
	2 5	E.NE.	4	C. K.	8
	3 5	E.NE.	2	C. K.	10
	4 5	E.NE.	3	C. K.	9
	6 5	E.SE.	3	C. K.	3
	8 5	NE.	3	Clear.	0
	9 5	NE.	3	Clear.	0
	10 5	E.SE.	3	Clear.	0

Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.
1861. Aug. 15	h. m. 0 5	NW.	1	Clear.	0
	2 5	NW.	1	Clear.	0
	3 5	NW.	1	Clear.	0
	4 5	NW.	1	Clear.	0
	6 5	NW.	1	Clear.	0
	8 5	NW.	2	Clear.	0
	9 5	SE.	1	Clear.	0
	10 5	SE.	1	K.	2
	Noon.	SE.	2	C. K.	3
	2 5	-	-	-	-
	3 5	-	-	-	-
	4 5	SE.	1	C. K.	3
	6 5	-	-	-	-
	8 5	NE.	1	C. S.	2
	9 5	SW.	1	C. K.	6
	10 5	SW.	1	C. K.	5
Aug. 18	0 5	N.	1	K.	10
	2 5	N.	1	K.	10
	3 5	N.NE.	1	K.	10
	4 5	N.NE.	1	K.	10
	6 5	NE.	1	Mist.	10
	8 5	NE.	1	Foggy.	10
	9 5	E.	1	Foggy.	10
	10 5	E.	1	K.	10
	Noon.	SE.	1	N.	10
	2 5	S.	1	N.	10
	3 5	S.	1	N.	10
	4 5	S.	1	K.	10
	6 5	N.	1	K.	10
	8 5	NE.	1	N.	10
	9 5	SE.	1	K.	10
	10 5	SE.	1	K.	10
Aug. 21	0 5	SE.	1	Clear.	0
	2 5	NW.	1	Clear.	0
	3 5	NW.	1	Clear.	0
	4 5	NW.	1	C.	2
	6 5	NW.	1	Foggy.	0
	8 5	NE.	1	C. K.	3
	9 5	NE.	1	C. K.	3
	10 5	-	-	-	-
	Noon.	-	-	-	-
	2 5	SE.	2	C. K.	2
	3 5	SE.	3	C. K.	2
	4 5	SE.	2	C. K.	2
	6 5	-	-	-	-
	8 5	SE.	1	C. K.	9
	9 5	SE.	2	C. K.	8
	10 5	SE.	1	C. K.	5

REMARKS.

August 13. Showery during the day. Amount of rain, 0. 610 inch.
16. Commenced raining at 1. 40 p. m.
17. Showery during the morning. Amount of rain, 0. 110 inch.
19. Raining at intervals most of the day. Amount of rain, 1. 000 inch.
20. Slight showers at midnight and till 3 a. m. Amount of rain, 0. 076 inch.

Hosted by Google

Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.
1861. Aug. 22	h. m.				
	0 5	S.	1	C. K.	7
	2 5	S.	1	K.	10
	3 5	S.	2	K.	10
	4 5	S.	1	K.	10
	6 5	S.	1	K.	10
	8 5	S.	1	K. N.	10
	9 5	S.	2	C. K.	7
	10 5	-	-	-	-
	Noon.	S.	2	N.	10
	2 5	-	-	-	-
	3 5	-	-	-	-
	4 5	SW.	2	N.	10
	6 5	SW.	2	K.	10
	8 5	SW.	4	K.	10
	9 5	NW.	4	N. and K.	10
	10 5	N.	3	N.	10
1861. Aug. 23	h. m.				
	0 5	N.	1	N.	10
	2 5	N.	1	K.	10
	3 5	NW.	2	K.	10
	4 5	NW.	2	C. S.	4
	6 5	NW.	3	C.	2
	8 5	NW.	3	C.	4
	9 5	NW.	4	C. K.	7
	10 5	-	-	-	-
	Noon.	N.	3	C. K.	7
	2 5	N.	3	C. K.	8
	3 5	-	-	-	-
	4 5	NW.	1	C.	4
	6 5	-	-	-	-
	8 5	NW.	1	C. S.	2
	9 5	NW.	1	C. S.	1
	10 5	NW.	1	Clear.	0
1861. Aug. 24	h. m.				
	0 5	NW.	1	Clear.	0
	2 5	NW.	1	Clear.	0
	3 5	NW.	1	Clear.	0
	4 5	NW.	1	S.	1
	6 5	NW.	1	Hazy.	0
	8 5	NW.	2	Clear.	0
	9 5	NE.	1	Clear.	0
	10 5	NE.	2	C.	1
	Noon.	NE.	2	C.	1
	2 5	-	-	-	-
	3 5	N.	1	C.	2
	4 5	N.	1	C.	2
	6 5	N.	1	C.	1
	8 5	N.	1	Clear.	0
	9 5	NW.	1	Clear.	0
	10 5	NW.	1	Clear.	0
Aug. 25	0 5	N.	1	Clear.	0
	2 5	NW.	1	Clear.	0
	3 5	NW.	1	Clear.	0
	4 5	NW.	1	Clear.	0
	6 5	NW.	1	Clear.	0
	8 5	NW.	1	Clear.	0
	9 5	NE.	1	Clear.	0
	10 5	SE.	1	Clear.	0
	Noon.	SE.	1	C. K.	4
	2 5	NE.	3	C. K.	4
	3 5	NE.	2	C. K.	4
	4 5	SE.	2	C. K.	3
	6 5	W.	1	C.	2
	8 5	NW.	1	C.	1
	9 5	NW.	1	C.	1
	10 5	NW.	1	C. S.	4
Aug. 26	0 5	N.	1	C. K.	10
	2 5	N.	1	C. K.	7
	3 5	N.	1	C. K.	5
	4 5	N.	1	C. K.	5
	6 5	N.	1	F'y, C. K.	0
	8 5	N.NE.	1	F'y, C. K.	0
	9 5	S.	1	C.	2
	10 5	S.	1	C. K.	4
	Noon.	S.	1	C. K.	5
	2 5	E.	2	C. K.	8
	3 5	E.	1	C. K.	9
	4 5	SE.	1	K.	10
	6 5	SE.	1	K.	10
	8 5	S.	1	C. K.	10
	9 5	S.	1	C. K.	3
	10 5	NW.	1	C. S.	3
Aug. 27	0 5	SE.	1	K.	10
	2 5	SE.	1	K.	10
	3 5	E.	1	K.	10
	4 5	E.	1	K.	10
	6 5	E.	1	K.	10
	8 5	NE.	1	K.	10
	9 5	NE.	1	K.	10
	10 5	S.	2	K.	10
	Noon.	SW.	1	K.	10
	2 5	-	-	-	-
	3 5	-	-	-	-
	4 5	SW.	1	N.	10
	6 5	NE.	1	N.	10
	8 5	E.	1	N.	10
	9 5	E.	1	N.	10
	10 5	-	-	-	10
Aug. 28	0 5	SE.	1	K.	10
	2 5	S. by W.	1	K.	10
	3 5	SW.	1	K.	10
	4 5	SW.	1	K.	10
	6 5	SW.	1	K.	10
	8 5	S.	1	N.	10
	9 5	SW.	1	N.	10
	10 5	-	-	-	-
	Noon.	S.	1	K.	10
	2 5	S.	1	K.	10
	3 5	S.	1	N.	10
	4 5	S.	1	N.	10
	6 5	S.	1	N.	10
	8 5	S.	1	N.	10
	9 5	S.	1	N.	10
	10 5	S.	1	Mist.	10
Aug. 29	0 5	S.	1	K.	10
	2 5	S.	1	N.	10
	3 5	S.	1	N.	10
	4 5	S.	1	K.	10
	6 5	S.	1	N.	10
	8 5	E.NE.	1	N.	10
	9 5	NE.	1	N.	10
	10 5	E.	1	N.	10
	Noon.	E.	1	N.	10
	2 5	-	-	-	-
	3 5	-	-	-	-
	4 5	NE.	1	K.	10
	6 5	NE.	1	K.	10
	8 5	NW.	1	C. S.	1
	9 5	NW.	1	C. S.	3
	10 5	NW.	1	Foggy.	0
Aug. 30	0 5	NW.	1	Foggy.	0
	2 5	NW.	1	Foggy.	0
	3 5	NW.	1	Foggy.	0
	4 5	NW.	2	C. K.	4
	6 5	NW.	3	C. K.	4
	8 5	NW.	3	C. K.	3
	9 5	NW.	2	C.	1
	10 5	-	-	-	-
	Noon.	NW.	2	C.	3
	2 5	-	-	-	-
	3 5	-	-	-	-
	4 5	W.	1	C.	3
	6 5	NW.	1	C. K.	4
	8 5	NW.	1	K.	9
	9 5	NW.	1	K.	9
	10 5	NW.	2	K.	9

REMARKS.

August 22. Showery during the afternoon. Not measurable.
23. Light shower at midnight.
27. Raining lightly at 10 a. m. and 3.45 p. m.
28. Commenced raining at 6.15 a. m., and at intervals during the day. Amount, 0.270 inch.
29. Raining at intervals until evening. Amount of rain, 0.330 inch.

Hosted by Google

Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.	Day.	Hour.	Wind. Direction.	Wind. Force.	Weather	Portion cloudy.	Day.	Hour.	Wind. Direction	Wind. Force.	Weather.	Portion cloudy.
1861.	h. m.					1861.	h. m.					1861.	h. m.				
Aug. 31	0 5	NW.	4	C. S.	3												
	2 5	NW.	4	C. S.	2												
	3 5	NW.	4	C. S.	2												
	4 5	NW.	4	S.	1												
	6 5	NW.	4	Clear.	0												
	8 5	NW.	4	Clear.	0												
	9 5	NW.	2	Clear.	0												
	10 5	-	-	-	-												
	Noon.	NW.	2	C. K.	3												
	2 5	W.	2	C. K.	4												
	3 5	W.	2	C. K.	2												
	4 5	W.	2	Clear.	0												
	6 5	N.	1	Clear.	0												
	8 5	N.	1	Clear.	0												
	9 5	NW.	1	Clear.	0												
	10 5	NW.	1	Clear.	0												
Sept. 1	0 5	NW.	1	Clear.	0	Sept. 2	0 5	N.	1	Clear.	0	Sept. 3	0 5	S.	1	K.	10
	2 5	NW.	2	Clear.	0		2 5	N.	1	Clear.	0		2 5	S.	1	K.	10
	3 5	NW.	1	Clear.	0		3 5	N.	1	Clear.	0		3 5	S.	1	C. K.	4
	4 5	NW.	1	Clear.	0		4 5	N.	1	C.	1		4 5	S.	1	C. K. S.	4
	6 5	N.	2	C. K.	8		6 5	N.	1	C.	2		6 5	S.	2	C.	2
	8 5	NE.	1	C. K.	5		8 5	N.	1	C.	3		8 5	SW.	2	C.	3
	9 5	NE.	1	C. K.	3		9 5	S.	2	C.	7		9 5	S.	1	C. S.	4
	10 5	E.	1	C.	2		10 5	-	-	-	-		10 5	S.	1	C. S.	4
	Noon.	S.	1	C.	2		Noon.	S.	3	C.	3		Noon.	-	-	-	-
	2 5	SE.	1	C. K.	3		2 5	S.	3	C.	8		2 5	-	-	-	-
	3 5	SE.	1	C. K.	2		3 5	S.	3	C.	7		3 5	-	-	-	-
	4 5	SE.	1	C. K.	2		4 5	S.	3	C.	8		4 5	S.	4	C.	1
	6 5	SE.	1	Clear.	0		6 5	S.	1	C.	2		6 5	S.	2	C.	1
	8 5	SE.	1	Clear.	0		8 5	S.	1	S.	1		8 5	SW.	1	K.	2
	9 5	SE.	1	Clear.	0		9 5	S.	1	Clear.	0		9 5	W.	1	K.	1
	10 5	NW.	1	Clear.	0		10 5	S.	1	Clear.	0		10 5	W.	2	C. K.	6
Sept. 4	0 5	SW.	1	C. S.	2	Sept. 5	0 5	SE.	1	K.	10	Sept. 6	0 5	E.	1	K.	10
	2 5	W.	1	C. S.	3		2 5	NE.	1	N.	10		2 5	E.	1	K.	10
	3 5	W.	1	C. K.	6		3 5	NE.	1	N.	10		3 5	NE.	1	K.	10
	4 5	NW.	1	C. K.	10		4 5	N.	3	N.	10		4 5	NE.	1	K.	10
	6 5	NW.	2	C. K.	9		6 5	N.	3	K.	10		6 5	NE.	1	K.	10
	8 5	NW.	2	C. K.	8		8 5	NE.	2	K.	10		8 5	NE.	1	K.	10
	9 5	NW.	3	C. K.	9		9 5	NE.	2	N.	10		9 5	NE.	1	K.	10
	10 5	-	-	-	-		10 5	-	-	-	-		10 5	-	-	-	-
	Noon.	NW.	3	C. K.	8		Noon.	-	-	-	-		Noon.	S.	1	C. K.	4
	2 5	-	-	-	-		2 5	-	-	-	-		2 5	-	-	-	-
	3 5	-	-	-	-		3 5	-	-	-	-		3 5	-	-	-	-
	4 5	NW.	2	C. K.	4		4 5	N.	2	N.	10		4 5	S.	2	C. K.	9
	6 5	NW.	1	C. S.	3		6 5	N.	1	N.	10		6 5	SW.	1	C. K.	6
	8 5	NW.	1	C. K.	7		8 5	N.	1	K.	10		8 5	W.	1	S.	1
	9 5	NW.	1	C. K.	9		9 5	N.	1	K.	10		9 5	W.	1	S.	1
	10 5	NW.	1	C. K.	6		10 5	N.	1	K.	10		10 5	W.	1	S.	1

REMARKS.

August 31. At 5.22 a. m. there were two prolonged tremors of the earth, apparently moving from south to north. The interval between them was about 10 seconds. They shook the dwelling sensibly, and caused loud rattling of crockery on shelves.—J. M. G.

September 3. Lightning at 7, 8, and 9 p. m.

4. Raining at 4.30 a. m.

5. Raining at 1.45 a. m., and at intervals during the day. Amount, 0.460 inch.

6. Lightning during the evening.

Hosted by Google

Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.
1861. Sept. 7	h. m. 0 5	NW.	1	S.	1
	2 5	NW.	1	K.	3
	3 5	NW.	1	K.	2
	4 5	NW.	1	S.	1
	6 5	NW.	1	C. K.	8
	8 5	NW.	2	C. K.	7
	9 5	NW.	1	C. K.	8
	10 5	-	-	-	-
	Noon.	N.	1	C. K.	8
	2 5	-	-	-	-
	3 5	NE.	1	C. K.	9
	4 5	-	-	-	-
	6 5	-	-	-	-
	8 5	N.	1	C. S.	4
	9 5	N.	1	C. K.	8
	10 5	N.	1	C. K.	8
Sept. 10	0 5	W.	1	K.	2
	2 5	W.	1	C. K.	4
	3 5	W.	1	C. K.	6
	4 5	W.	1	C. K.	6
	6 5	NW.	1	K.	10
	8 5	N. NE.	1	K.	10
	9 5	N. NE.	1	K.	10
	10 5	-	-	-	-
	Noon.	S.	1	C. K.	7
	2 5	-	-	-	-
	3 5	S.	1	C. K.	6
	4 5	SE.	1	C. K.	9
	6 5	-	-	-	-
	8 5	E.	1	C. K.	6
	9 5	N.	1	C. K.	5
	10 5	N.	1	C. K.	4
Sept. 13	0 5	NW.	1	S.	1
	2 5	NW.	1	K.	3
	3 5	NW.	1	C. K.	4
	4 5	NW.	1	S.	1
	6 5	NW.	2	Clear.	0
	8 5	NW.	2	Clear.	0
	9 5	SW.	1	C. K.	3
	10 5	-	-	-	-
	Noon.	NW.	1	C. K.	4
	2 5	-	-	-	-
	3 5	W. NW.	1	C. K.	3
	4 5	-	-	-	-
	6 5	NW.	1	Clear.	0
	8 5	NW.	1	Clear.	0
	9 5	NW.	1	Clear.	0
	10 5	NW.	1	Clear.	0

Day.	Hour.	Wind. Direction	Wind. Force.	Weather.	Portion cloudy.
1861. Sept. 8	h. m. 0 5	Calm.	0	K.	10
	2 5	N.	1	C. K.	6
	3 5	N.	1	C. K.	4
	4 5	NE.	1	C. K.	6
	6 5	NE.	2	C. S.	4
	8 5	NE.	4	C. S.	4
	9 5	NE.	3	C. K.	8
	10 5	NE.	2	C. K.	8
	Noon.	E.	1	C. K.	9
	2 5	E.	1	K.	10
	3 5	N.	1	K.	10
	4 5	NE.	1	C. K.	6
	6 5	NE.	1	C. K.	8
	8 5	NE.	1	C. K.	5
	9 5	NE.	1	C. K.	4
	10 5	NE.	1	C. K.	6
Sept. 11	0 5	SE.	2	C. K.	9
	2 5	SE.	3	C. K.	10
	3 5	SE.	3	C. K.	10
	4 5	S.	4	C. K.	10
	6 5	S.	4	C. K.	10
	8 5	S. SW.	5	C. K.	10
	9 5	SW.	4	N.	10
	10 5	S.	4	C. K.	7
	Noon.	S.	4	C. K.	9
	2 5	S.	4	C. K.	8
	3 5	S.	3	C. K.	10
	4 5	SW.	3	N.	10
	6 5	SW.	3	N.	10
	8 5	SW.	3	N.	10
	9 5	SW.	2	K.	10
	10 5	SW.	2	N.	10
Sept. 14	0 5	NW.	1	Clear.	0
	2 5	NW.	1	C.	1
	3 5	NW.	1	C.	2
	4 5	NW.	1	C.	4
	6 5	NW.	1	CK.	6
	8 5	N.	1	CK.	6
	9 5	SW.	1	CK.	6
	10 5	-	-	-	-
	Noon.	-	-	-	-
	2 5	-	-	-	-
	3 5	S.	2	CK.	3
	4 5	S.	3	CK.	2
	6 5	S.	2	C. S.	6
	8 5	S.	1	C.	1
	9 5	S.	1	C.	1
	10 5	S.	1	C.	1

Day.	Hour.	Wind. Direction.	Wind. Force	Weather.	Portion cloudy.
1861. Sept. 9	h. m. 0 5	E.	1	C. K.	3
	2 5	E.	1	K.	10
	3 5	E.	1	K.	10
	4 5	NE.	1	K.	10
	6 5	NE.	1	K.	9
	8 5	S.	1	K.	9
	9 5	-	-	-	-
	10 5	S.	1	K.	10
	Noon.	S.	1	C. K.	4
	2 5	-	-	-	-
	3 5	S.	1	C. K.	4
	4 5	S.	2	C. K.	3
	6 5	S.	1	C. K. S.	6
	8 5	S.	1	C. S.	3
	9 5	S.	1	C. S.	2
	10 5	W.	1	C. K.	7
Sept. 12	0 5	NW.	1	N.	10
	2 5	NW.	1	N.	10
	3 5	NW.	2	K.	10
	4 5	NW.	1	N.	10
	6 5	NW.	1	C. K.	8
	8 5	NW.	3	C. K.	8
	9 5	NW.	3	C. K.	7
	10 5	NW.	3	C. K.	6
	Noon.	-	-	-	-
	2 5	-	-	-	-
	3 5	NW.	3	C. K.	6
	4 5	NW.	3	C. K.	5
	6 5	-	-	-	-
	8 5	W.	1	C. S.	3
	9 5	W.	1	C. S.	2
	10 5	NW.	1	C.	2
Sept. 15	0 5	S.	2	C. K.	4
	2 5	S.	1	C. K.	6
	3 5	S.	1	C. K.	8
	4 5	SW.	1	C. S.	2
	6 5	S.	1	C. S.	3
	8 5	S.	1	C. S.	2
	9 5	W.	1	C. S.	3
	10 5	W.	2	C. S.	3
	Noon.	W.	1	C.	2
	2 5	NW.	2	C. K.	4
	3 5	W.	1	C. K.	4
	4 5	W.	1	C. K.	4
	6 5	S.	1	C. K.	6
	8 5	S.	1	C. K. S.	4
	9 5	SW.	1	C. K. S.	3
	10 5	W.	1	C. K. S.	10

REMARKS.

September 11. Showery during the day. Amount of rain included in next day's.
12. Showery during the day. Amount of rain in the gauge, 0. 946 inch.
13. Very heavy dew this morning.

Hosted by Google

Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.	Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.	Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.
1861.	h. m.					1861.	h. m					1861.	h. m				
Sept. 16	0 5	S.	1	N.	10	Sept. 17	0 5	E.	1	K.	10	Sept. 18	0 5	NW.	1	Clear.	0
	2 5	NW.	1	N.	10		2 5	SE.	1	K.	10		2 5	NW.	1	C.	4
	3 5	NW.	2	C. K.	8		3 5	SE.	1	N.	10		3 5	NW.	1	C. K.	6
	4 5	NE.	3	C. K.	9		4 5	E. SE.	1	N.	10		4 5	N.	1	C.	2
	6 5	NE.	2	C. K.	9		6 5	E. SE.	1	K.	10		6 5	N.	1	C.	2
	8 5	N.	3	C. K.	4		8 5	SE.	1	K.	10		8 5	N.	1	K.	10
	9 5	-	-	-	-		9 5	-	-	-	-		9 5	N.	2	K.	10
	10 5	-	-	-	-		10 5	-	-	-	-		10 5	N.	3	C. K.	6
	Noon.	-	-	-	-		Noon.	-	-	-	-		Noon.	N.	2	C. K.	9
	2 5	SW.	2	C. K.	6		2 5	S.	2	K.	6		2 5	-	-	-	-
	3 5	-	-	-	-		3 5	S.	1	K.	10		3 5	N.	1	C. K.	10
	4 5	SW.	1	C. K.	5		4 5	NW.	2	N.	10		4 5	N.	1	C. K.	6
	6 5	E.	1	C. K.	4		6 5	NW.	1	C. K.	6		6 5	N.	1	C. K.	4
	8 5	E.	1	K.	10		8 5	NW.	1	C. K.	7		8 5	E.	2	C.	2
	9 5	E.	1	K.	10		9 5	NE.	1	C. K.	9		9 5	E.	1	C.	1
	10 5	E.	1	K.	10		10 5	N.	1	C. K.	4		10 5	N.	1	C. K.	8
Sept. 19	0 5	N.	1	C.	4	Sept. 20	0 5	SW.	1	C.	1	Sept. 21	0 5	S.	1	Clear.	0
	2 5	N. NW.	1	C. K.	10		2 5	W.	1	C.	2		2 5	S.	1	C.	1
	3 5	N. NW.	1	K.	10		3 5	W.	1	C. S.	4		3 5	S.	1	C. K.	1
	4 5	N. NW.	1	K.	10		4 5	S.	1	C. S.	4		4 5	S.	1	C. K.	2
	6 5	N. NW.	1	K.	10		6 5	S.	1	C. S.	4		6 5	S.	2	C. K. S.	2
	8 5	N.	1	K.	10		8 5	S.	1	C. K.	8		8 5	S.	1	C.	2
	9 5	N.	1	K.	10		9 5	-	-	-	-		9 5	S.	1	C. S.	2
	10 5	-	-	-	-		10 5	S.	1	C. K.	10		10 5	S.	2	C. S.	2
	Noon.	-	-	-	-		Noon.	S.	1	C. K.	6		Noon.	-	-	-	-
	2 5	SE.	1	C. K.	4		2 5	S.	1	C. K.	9		2 5	S. SW.	2	K.	10
	3 5	S.	1	C.	3		3 5	S.	2	C. K.	9		3 5	SW.	1	C. K.	7
	4 5	S.	1	C. K.	3		4 5	S.	2	C. K.	6		4 5	S. SW.	2	C. K.	10
	6 5	S.	1	C. K.	2		6 5	S.	1	C. S.	4		6 5	SW.	1	N.	10
	8 5	SW.	1	C.	3		8 5	S.	1	C.	3		8 5	NW.	3	N.	10
	9 5	-	-	-	-		9 5	S.	1	C.	2		9 5	NW.	5	N.	10
	10 5	SW.	1	C.	3		10 5	S.	1	C.	2		10 5	NW.	4	K.	10
Sept. 22	0 5	NW.	4	C. K.	10	Sept. 23	0 5	NW.	1	Clear.	0	Sept. 24	0 5	NW.	1	C.	2
	2 5	NW.	2	N.	10		2 5	NW.	2	Clear.	0		2 5	NW.	1	C.	3
	3 5	NW.	2	N.	10		3 5	NW.	3	Clear.	0		3 5	NW.	1	C.	2
	4 5	NW.	2	K.	10		4 5	NW.	1	Clear.	0		4 5	NW.	1	C.	2
	6 5	NW.	1	K.	10		6 5	NW.	1	C. S.	3		6 5	NW.	1	C. S.	2
	8 5	N. NW.	2	K.	10		8 5	W.	1	C.	1		8 5	NW.	1	C. S.	2
	9 5	N. NW.	4	K.	9		9 5	W.	1	C.	1		9 5	NW.	1	C. S.	3
	10 5	N.	3	K.	9		10 5	W.	2	C.	3		10 5	N.	1	C. S.	1
	Noon.	N. NW.	3	C. K.	10		Noon.	NW.	1	C. S.	4		Noon.	NW.	1	C. K.	7
	2 5	N. NW.	4	C. K.	10		2 5	NW.	2	C. K.	4		2 5	N. NW.	1	C. K.	6
	3 5	N. NW.	3	C. K.	9		3 5	-	-	-	-		3 5	W.	1	C. K.	4
	4 5	N. NW.	3	C. K.	5		4 5	NW.	1	C.	3		4 5	N.	1	C.	1
	6 5	N.	1	C.	1		6 5	NW.	1	C. K. S.	8		6 5	N.	1	S.	1
	8 5	NW.	1	Clear.	0		8 5	NW.	1	C. K.	3		8 5	NW.	1	S.	1
	9 5	NW.	1	Clear.	0		9 5	NW.	1	C. K.	3		9 5	NW.	1	S.	1
	10 5	NW.	1	Foggy.	0		10 5	NW.	1	C. K.	3		10 5	NW.	1	Clear.	0

REMARKS.

September 17. Storm, with lightning and thunder, at 4 p. m. Amount of rain, 0.502 inch.
21. Commenced raining at 5 p. m. Amount of rain, 0.180 inch.
22. Light rains in the early part of the morning.

Hosted by Google

Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.
1861. Sept. 25	h. m.				
	0 5	-	-	-	-
	2 5	NW.	1	C.	2
	3 5	NW.	1	Clear.	0
	4 5	NW.	1	Clear.	0
	6 5	NW.	1	Foggy.	0
	8 5	NW.	1	Clear.	0
	9 5	-	-	-	-
	10 5	SE.	1	C.	1
	Noon.	S.	2	C. K.	2
	2 5	S.	2	C. K.	3
	3 5	S.	1	C. K.	2
	4 5	S.	1	C. K.	3
	6 5	SE.	2	C. S.	2
	8 5	NW.	1	Clear.	0
	9 5	NW.	1	Clear.	0
	10 5	SE.	1	S.	1
Sept. 28	0 5	NW.	4	Clear.	0
	2 5	W.	4	C. K.	4
	3 5	W.	4	C. K.	10
	4 5	W.NW.	4	C. K.	6
	6 5	W.NW.	4	C. S.	2
	8 5	W.NW.	4	C. S.	1
	9 5	-	-	-	-
	10 5	-	-	-	-
	Noon.	W.NW.	4	C. K.	3
	2 5	-	-	-	-
	3 5	W.NW.	4	C. K.	3
	4 5	W.NW.	4	C. K.	3
	6 5	NW.	3	S.	1
	8 5	NW.	4	Clear.	0
	9 5	NW.	3	Clear.	0
	10 5	NW.	3	Clear.	0
Oct. 1	0 5	N.	1	Clear.	0
	2 5	N.	1	Foggy.	0
	3 5	N.	1	Foggy.	0
	4 5	N.	1	C. S.	2
	6 5	N.	1	Foggy.	2
	8 5	NW.	1	C.	8
	9 5	NW.	1	C.	4
	10 5	NW.	1	C.	4
	Noon.	SE.	1	C. K.	6
	2 5	SE.	2	C. K.	4
	3 5	SE.	1	C.	2
	4 5	SE.	1	C. K.	6
	6 5	SE.	1	C. S.	4
	8 5	SE.	1	C. K.	4
	9 5	SE.	1	C. K.	4
	10 5	SE.	1	C. K.	8

Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.
1861. Sept. 26	h. m.				
	0 5	SE.	2	C. K.	9
	2 5	S.	1	C. K.	8
	3 5	S.	1	C. K.	4
	4 5	S.	1	C. K.	9
	6 5	S.	1	C. K.	8
	8 5	S.	3	C.	1
	9 5	S.	3	C.	2
	10 5	S.SE.	3	C. K.	2
	Noon.	S.	3	C. K.	9
	2 5	S.	3	C. K.	9
	3 5	S.	3	C. K.	8
	4 5	S.	4	C. K.	8
	6 5	S.	2	C. K.	7
	8 5	S.	3	C. K.	6
	9 5	S.	2	C. K.	9
	10 5	S.	1	K.	10
Sept. 29	0 5	NW.	2	Clear.	0
	2 5	NW.	1	Clear.	0
	3 5	NW.	1	Clear.	0
	4 5	NW.	1	Clear.	0
	6 5	NW.	1	Clear.	0
	8 5	NW.	1	Clear.	0
	9 5	-	-	-	-
	10 5	NW.	2	Clear.	0
	Noon.	NW.	1	C.	1
	2 5	N.	1	C.	1
	3 5	NW.	1	Clear.	0
	4 5	NW.	1	Clear.	0
	6 5	NW.	1	Clear.	0
	8 5	NW.	1	Clear.	0
	9 5	NW.	1	Clear.	0
	10 5	NW.	1	Clear.	0
Oct. 2	0 5	SE.	1	C. K.	4
	2 5	SE.	1	C. K.	6
	3 5	E.	1	C. K.	8
	4 5	E.	1	C. K.	10
	6 5	E.	1	K.	10
	8 5	NE.	1	Foggy.	10
	9 5	NE.	1	Foggy.	10
	10 5	-	-	-	-
	Noon.	S.	1	N.	10
	2 5	S. by E.	1	K. N.	10
	3 5	SE.	1	K. N.	10
	4 5	NW.	1	K. N.	10
	6 5	-	-	-	-
	8 5	SE.	1	C. K.	8
	9 5	SE.	1	C. K.	5
	10 5	N.	1	C. K.	4

Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.
1861. Sept. 27	h. m.				
	0 5	SE.	1	N.	10
	2 5	E.	1	N.	10
	3 5	E.	1	N.	10
	4 5	E.	1	N.	10
	6 5	SE.	1	N.	10
	8 5	NE.	1	N.	10
	9 5	E.	1	N.	10
	10 5	-	-	-	-
	Noon.	SE.	5	K.	10
	2 5	SE.	6	K.	10
	3 5	SE.	6	N.	10
	4 5	SE.	6	N.	10
	6 5	S.	6	K.	8
	8 5	SW.	6	K.	9
	9 5	W.	6	K.	10
	10 5	NW.	4	K.	8
Sept. 30	0 5	NW.	1	Clear.	0
	2 5	NW.	1	Foggy.	0
	3 5	NW.	1	Foggy.	0
	4 5	NW.	1	Foggy.	0
	6 5	NW.	1	Foggy.	0
	8 5	NE.	1	Foggy.	0
	9 5	N.	1	Foggy.	0
	10 5	S.	1	C. K.	4
	Noon.	S.SE.	1	C. K.	6
	2 5	S.	1	C. K.	4
	3 5	SE.	1	C. K.	4
	4 5	S.	1	C. K.	2
	6 5	N.	1	S.	1
	8 5	N.	1	Clear.	0
	9 5	N.	1	Clear.	0
	10 5	N.	1	Clear.	0
Oct. 3	0 5	N.	1	C.	2
	2 5	N.	1	C.	1
	3 5	N.	1	Clear.	0
	4 5	N.	1	C. S.	1
	6 5	N.	1	C. S.	1
	8 5	W.	1	Clear.	0
	9 5	-	-	-	-
	10 5	NW.	2	C.	1
	Noon.	-	-	-	-
	2 5	NW.	2	C. S.	1
	3 5	NW.	1	C.	1
	4 5	W.	1	C.	1
	6 5	NW.	1	C. S.	1
	8 5	NW.	1	C. S.	1
	9 5	NW.	1	C. S.	2
	10 5	NW.	1	Clear.	0

REMARKS.

September 27. Light rains nearly all day. Amount of rain, 0.270 inch.
October 2. Commenced light rain at 9.30 a. m. Rain not measurable in the gauge.

Hosted by Google

Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.
1861. Oct. 4	h. m.				
	0 5	NW.	1	Clear.	0
	2 5	NW.	1	Clear.	0
	3 5	W.	1	Clear.	0
	4 5	W.	1	C.	1
	6 5	W.	1	C. S.	2
	8 5	W.	1	C. S.	2
	9 5	NE.	1	Hazy.	2
	10 5	-	-	-	-
	Noon.	-	-	-	-
	2 5	-	-	-	-
	3 5	-	-	-	-
	4 5	SE.	1	C. K.	6
	6 5	W.	1	C. S.	3
	8 5	SW.	1	C. S.	4
	9 5	SW.	1	C.	2
	10 5	SW.	1	C.	2
1861. Oct. 5	h. m.				
	0 5	SW.	1	C. K.	7
	2 5	SW.	1	C. K.	9
	3 5	SW.	1	C. K.	4
	4 5	SW.	1	C. S.	8
	6 5	SW.	1	C. S.	6
	8 5	S.SW.	1	C. K.	4
	9 5	S.	1	C. K.	4
	10 5	-	-	-	-
	Noon.	S.	1	C. K.	4
	2 5	-	-	-	-
	3 5	SW.	1	C. K.	3
	4 5	S. by W.	1	C.	1
	6 5	S. by W.	1	C. S.	3
	8 5	S. by W.	1	C. K. S.	4
	9 5	S. by W.	1	C. K. S.	4
	10 5	S.	1	C. S.	3
1861. Oct. 6	h. m				
	0 5	S.	1	C.	2
	2 5	S.	1	C.	1
	3 5	S.	1	C.	2
	4 5	S.	1	C. K.	4
	6 5	S.	1	C. K.	4
	8 5	S.	2	C.	1
	9 5	SW.	3	C. S.	2
	10 5	S.	4	C. K. S.	3
	Noon.	S.	4	C. K. S.	3
	2 5	S.	4	C. K. S.	6
	3 5	S. by W.	4	C. S.	4
	4 5	S.SW.	4	C.	2
	6 5	S.SW.	3	C. K.	4
	8 5	S.SW.	4	C. K.	6
	9 5	S.SW.	4	C. K.	8
	10 5	S.SW.	4	C. K.	4
Oct. 7	0 5	SW.	2	C. K.	8
	2 5	SW.	1	K.	9
	3 5	SW.	1	K.	8
	4 5	SW.	1	K.	9
	6 5	SW.	1	C. K. S.	8
	8 5	NW.	2	C. K.	8
	9 5	NW.	2	C. K.	5
	10 5	-	-	-	-
	Noon.	N.	1	C. K.	8
	2 5	-	-	-	-
	3 5	E.	3	C. K.	9
	4 5	E.	3	K.	10
	6 5	NW.	4	N.	10
	8 5	NE.	2	N.	10
	9 5	NE.	1	K.	10
	10 5	N.	1	K.	10
Oct. 8	0 5	NW.	6	K.	10
	2 5	NW.	6	N.	10
	3 5	NW.	5	N.	10
	4 5	NW.	4	N.	10
	6 5	N.	4	N.	10
	8 5	NW.	5	C. K.	9
	9 5	NW.	5	C. K.	10
	10 5	N.NW.	4	N.	10
	Noon.	N.NW.	4	K.	10
	2 5	N.NW.	4	C. K.	9
	3 5	N.	4	C. K.	9
	4 5	N.	4	C. K.	7
	6 5	N.	3	C.	2
	8 9	NW.	2	Clear.	0
	9 5	NW.	3	C.	1
	10 5	NW.	2	C.	2
Oct. 9	0 5	NW.	3	Clear.	0
	2 5	NW.	2	Clear.	0
	3 5	NW.	2	Clear.	0
	4 5	NW.	4	K.	10
	6 5	NW.	4	K.	10
	8 5	N. by E.	3	K.	10
	9 5	-	-	-	-
	10 5	-	-	-	-
	Noon.	NE.	2	K.	10
	2 5	-	-	-	-
	3 5	NE.	2	C. K.	6
	4 5	NE.	3	C. K.	8
	6 5	NE.	2	K.	10
	8 5	NE.	2	K.	10
	9 5	NE.	2	K.	10
	10 5	NE.	2	K.	10
Oct. 10	0 5	NE.	1	K.	10
	2 5	NE.	1	K.	10
	3 5	N.	1	K.	10
	4 5	N.	2	K.	10
	6 5	N.	1	K.	10
	8 5	N.	2	K.	10
	9 5	N.	3	C. K.	10
	10 5	-	-	-	-
	Noon.	NE.	3	N.	10
	2 5	-	-	-	-
	3 5	N.	2	N.	10
	4 5	N.	1	N.	10
	6 5	NW.	1	N.	10
	8 5	NW.	1	N.	10
	9 5	NW.	1	N.	10
	10 5	NW.	1	N.	10
Oct. 11	0 5	NW.	2	N.	10
	2 5	NW.	3	K.	10
	3 5	NW.	3	K.	10
	4 5	NW.	2	K.	10
	6 5	NW.	2	K.	10
	8 5	SW.	1	C. K.	10
	9 5	SW.	1	K.	10
	10 5	SW.	1	K.	10
	Noon.	SE.	2	C. K.	8
	2 5	SE.	2	C. K.	3
	3 5	-	-	-	-
	4 5	SE.	2	C. K.	4
	6 5	S.SE.	1	C. K.	10
	8 5	S.SE.	1	C. K.	10
	9 5	S.SE.	1	C. K.	8
	10 5	SE.	1	C. K.	10
Oct. 12	0 5	SE.	1	K.	10
	2 5	NW.	4	N.	10
	3 5	NW.	3	N.	10
	4 5	NW.	3	C. K.	6
	6 5	NW.	2	C. S.	4
	8 5	NW.	1	Clear.	0
	9 5	NW.	3	C.	1
	10 5	NW.	3	C. S.	1
	Noon.	-	-	-	-
	2 5	SW.	1	C. K.	2
	3 5	-	-	-	-
	4 5	S.	2	C. K.	6
	6 5	S.	1	C. S.	2
	8 5	SW.	2	C. K.	4
	9 5	SW.	2	C.	2
	10 5	SW.	1	C. K.	6

REMARKS.

October 6. Lightning all the evening.
7. Commenced raining, with lightning and thunder, at 5.10 p. m. Amount, 0.770 inch.
8. Raining most of the morning. Amount of rain, 0.923 inch.
10. Commenced raining at noon. Amount of rain, 0.100 inch.
12. Raining at 2 a. m. Amount of rain, 0.474 inch.

Hosted by Google

Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.
1861. Oct. 13	h. m. 0 5	SW.	1	C. S.	2
	2 5	SW.	1	C. K.	3
	3 5	SW.	1	C. K.	4
	4 5	SW.	1	C. S.	2
	6 5	W.	5	C. K.	6
	8 5	NW.	4	C. K.	3
	9 5	W.	4	C. K.	4
	10 5	W.	4	C. K.	4
	Noon.	-	-	-	-
	2 5	W.	5	C.	2
	3 5	NW.	4	C.	2
	4 5	NW.	2	C.	1
	6 5	NW.	3	Clear.	0
	8 5	NW.	3	Clear.	0
	9 5	NW.	2	Clear.	0
	10 5	NW.	2	Clear.	0
1861. Oct. 14	h. m. 0 5	Calm.	0	Clear.	0
	2 5	Calm.	0	Clear.	0
	3 5	Calm.	0	Clear.	0
	4 5	W.	1	Clear.	0
	6 5	W.	1	Clear.	0
	8 5	W.	1	Clear.	0
	9 5	S.	1	Clear.	0
	10 5	-	-	-	-
	Noon.	S.	1	Clear.	0
	2 5	SW.	1	C.	1
	3 5	SW.	1	C.	1
	4 5	W.	1	C.	1
	6 5	SW.	1	Clear.	0
	8 5	W.	1	Clear.	0
	9 5	W.	1	Clear.	0
	10 5	S.	1	Clear.	0
1861. Oct. 15	h. m. 0 5	SW.	1	Clear.	0
	2 5	SW.	1	Clear.	0
	3 5	SW.	1	Clear.	0
	4 5	SW.	1	Clear.	0
	6 5	W.	1	Hazy.	0
	8 5	NW.	1	Hazy.	0
	9 5	S.	1	Hazy.	0
	10 5	-	-	-	-
	Noon.	S.	1	Clear.	0
	2 5	-	-	-	-
	3 5	-	-	-	-
	4 5	S.	1	Clear.	0
	6 5	SW.	1	C. S.	2
	8 5	S.	1	C. K.	4
	9 5	S.	1	C.	4
	10 5	S.	1	C.	4
Oct. 16	0 5	Calm.	0	C. S.	3
	2 5	Calm.	0	C. K.	6
	3 5	Calm.	0	Foggy.	6
	4 5	Calm.	0	Foggy.	6
	6 5	S.	1	Foggy.	6
	8 5	SE.	1	C. K.	8
	9 5	S.	1	C. K.	8
	10 5	SE.	1	C. K.	10
	Noon.	SE.	1	C. K.	10
	2 5	-	-	-	-
	3 5	-	-	-	-
	4 5	SE.	1	C. K.	10
	6 5	SE.	1	K.	10
	8 5	SE.	1	K.	10
	9 5	SE.	1	K.	10
	10 5	E.	1	K.	10
Oct. 17	0 5	E.	1	K.	10
	2 5	NE.	1	K.	10
	3 5	N.	1	K.	10
	4 5	-	-	-	-
	6 5	NE.	1	K.	10
	8 5	NE.	1	K.	10
	9 5	NE.	1	K.	10
	10 5	-	-	-	-
	Noon.	E.	1	K.	10
	2 5	NE.	1	K.	10
	3 5	NE.	1	K.	10
	4 5	NE.	1	K.	10
	6 5	NE.	1	K.	10
	8 5	NE.	2	N.	10
	9 5	NE.	3	N.	10
	10 5	-	-	-	-
Oct. 18	0 5	E.	1	N.	10
	2 5	E.	1	N.	10
	3 5	E.	1	N.	10
	4 5	E.	1	K.	10
	6 5	E.	1	K.	10
	8 5	NE.	1	K.	10
	9 5	S.	1	K.	10
	10 5	S. by E.	1	K.	10
	Noon.	SW.	1	K.	10
	2 5	-	-	-	-
	3 5	-	-	-	-
	4 5	-	-	-	-
	6 5	SE.	1	S.	1
	8 5	SE.	1	C.	1
	9 5	E.	1	C.	1
	10 5	E.	1	C. K.	4
Oct. 19	0 5	SE.	1	C. K.	8
	2 5	SE.	1	C. K.	8
	3 5	SE.	1	C. K.	8
	4 5	SE.	1	C. K.	8
	6 5	SE.	1	C. K.	8
	8 5	SE.	1	C. K.	8
	9 5	SE.	1	C. K.	8
	10 5	S.	1	N.	10
	Noon.	S.	1	K.	10
	2 5	S.	1	K.	10
	3 5	SW.	1	K.	10
	4 5	S.	1	K.	10
	6 5	S.SW.	1	K. S.	10
	8 5	W.	1	C. K.	10
	9 5	NW.	1	C. K.	10
	10 5	NW.	1	C. K.	10
Oct. 20	0 5	NW.	2	C. K.	10
	2 5	NW.	1	C. K.	8
	3 5	NW.	1	C. K.	8
	4 5	NW.	2	C. K.	10
	6 5	NW.	2	C. K.	10
	8 5	N.NW.	3	C. K.	6
	9 5	N.NW.	3	C. K.	8
	10 5	N.NW.	3	C. K.	8
	Noon.	N NW.	2	C. K.	9
	2 5	N.NW.	2	C. K.	9
	3 5	N.NW.	2	C. K.	8
	4 5	N. by W.	1	C. K.	10
	6 5	NW.	1	C. K.	10
	8 5	N.	1	C. K.	10
	9 5	N.	1	C. K.	10
	10 5	N.	1	C. K.	8
Oct. 21	0 5	NW.	1	C. K.	6
	2 5	N. by E.	3	C. K.	9
	3 5	N. by E.	3	C. K.	10
	4 5	N. by E.	4	C. K.	10
	6 5	N.NE.	3	C. K. S.	10
	8 5	N.NE.	3	C. K.	9
	9 5	NE.	2	C. K.	8
	10 5	-	-	-	-
	Noon.	NE.	2	C.	6
	2 5	NE.	2	C. K.	8
	3 5	NE.	3	C. K.	10
	4 5	NE.	3	C. K.	10
	6 5	NE.	2	C. K. S.	9
	8 5	NE.	4	C. K.	10
	9 5	NE.	3	C. K.	10
	10 5	NE.	3	C. K.	10

REMARKS.

October 17. Commenced raining at 6. 15 p. m. Amount, 0. 570 inch.
18. Continued raining until 3. 20 a. m. Amount, 0. 070 inch.

Hosted by Google

Day.	Hour.	WIND. Direction	WIND. Force.	Weather.	Portion cloudy	Day.	Hour	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.
1861.	h m.					1861.	h. m.					1861.	h. m.				
Oct. 22	0 5	NE.	3	C. K.	10	Oct. 23	0 5	NW.	1	K.	10	Oct. 24	0 5	NW.	3	Clear.	0
	2 5	NE.	2	C. K.	10		2 5	W.	1	K.	10		2 5	NW.	3	Clear.	0
	3 5	NE.	2	C. K.	10		3 5	W. SW.	1	K.	10		3 5	NW.	2	Clear.	0
	4 5	NE.	2	C. K.	10		4 5	W. SW.	1	K.	10		4 5	NW.	2	Clear.	0
	6 5	N.	2	N.	10		6 5	W. SW.	1	K.	10		6 5	NW.	1	Clear.	0
	8 5	NE.	2	N.	10		8 5	S. SW.	1	K.	10		8 5	NW.	2	Clear.	0
	9 5	N.	2	N.	10		9 5	SW.	1	K.	10		9 5	W. SW.	3	Clear.	0
	10 5	N.	2	N.	10		10 5	SW.	1	K.	10		10 5	W.	3	K.	1
	Noon	N.	3	N.	10		Noon.	W.	2	K.	10		Noon.	NW.	4	C. K.	2
	2 5	N.	2	N.	10		2 5	W. NW.	4	C. S.	3		2 5	NW.	3	C. K.	2
	3 5	N.	2	N.	10		3 5	NW.	5	S.	1		3 5	W.	2	C. K.	2
	4 5	N.	2	N.	10		4 5	NW.	5	S.	1		4 5	W. NW.	3	Clear.	0
	6 5	NE.	1	N.	10		6 5	NW.	6	S.	1		6 5	W.	1	Clear.	0
	8 5	NE.	1	N.	10		8 5	NW.	5	Clear.	0		8 5	W.	1	Clear.	0
	9 5	NE.	1	K.	10		9 5	NW.	5	Clear.	0		9 5	NW.	1	Clear.	0
	10 5	NW.	1	N.	10		10 5	NW.	4	Clear.	0		10 5	NW.	1	Clear.	0
Oct. 25	0 5	NW.	1	Clear.	0	Oct. 26	0 5	SE.	1	C. K.	6	Oct. 27	0 5	SW.	1	N.	10
	2 5	NW.	1	Clear.	0		2 5	NE.	1	K.	10		2 5	NW.	1	K.	10
	3 5	NW.	1	Clear.	0		3 5	N.	1	K.	10		3 5	N.	2	K.	10
	4 5	NW.	1	Clear.	0		4 5	NW.	1	K.	10		4 5	N.	2	K.	10
	6 5	N.	1	C. S.	2		6 5	NW.	1	K.	10		6 5	N.	2	C. K. S.	10
	8 5	N. NE.	1	C. S.	7		8 5	NW.	1	K.	10		8 5	N.	3	C. K. S.	8
	9 5	NE.	1	C. S.	6		9 5	NE.	1	K.	10		9 5	N.	3	C. K.	6
	10 5	NE.	1	C. S.	6		10 5	N.	1	K.	10		10 5	N.	3	C.	1
	Noon.	-	-	-	-		Noon.	-	-	-	-		Noon.	NW.	4	C.	3
	2 5	NE.	1	C. K.	10		2 5	N.	1	K.	10		2 5	NW.	4	C.	2
	3 5	SE.	1	C. K.	10		3 5	S.	1	C. K.	10		3 5	NW.	4	C.	1
	4 5	SE.	1	C. K.	9		4 5	SE.	1	C. K.	10		4 5	NW.	2	C.	1
	6 5	SE.	1	C. K.	10		6 5	S.	1	C. K.	10		6 5	NW.	3	C.	1
	8 5	SE.	1	K.	10		8 5	S.	1	N.	10		8 5	NW.	2	Clear.	0
	9 5	SE.	1	K.	10		9 5	N.	1	N.	10		9 5	NW.	1	Clear.	0
	10 5	SE.	1	K.	10		10 5	N.	1	K.	10		10 5	NW.	1	Clear.	0
Oct. 28	0 5	NW.	1	Clear.	0	Oct. 29	0 5	NW.	1	Clear.	0	Oct. 30	0 5	NW.	1	Clear.	0
	2 5	NW.	1	Clear.	0		2 5	NW.	1	Clear.	0		2 5	SW.	1	C.	2
	3 5	NW.	1	Clear.	0		3 5	NW.	1	Clear.	0		3 5	SW.	1	C. K.	4
	4 5	NW.	1	Clear.	0		4 5	NW.	1	Clear.	0		4 5	S.	1	C. K.	8
	6 5	NW.	1	Clear.	0		6 5	NW.	1	Clear.	0		6 5	S.	1	C. K.	4
	8 5	NW.	2	Clear.	0		8 5	NW.	1	Clear.	0		8 5	S.	1	Hazy.	4
	9 5	N.	2	Clear.	0		9 5	W.	1	Clear.	0		9 5	S.	1	C. K.	7
	10 5	N.	2	Clear.	0		10 5	NW.	2	Clear.	0		10 5	-	-	-	-
	Noon.	-	-	-	-		Noon.	NW.	1	Clear.	0		Noon.	-	-	-	-
	2 5	-	-	-	-		2 5	NW.	2	Clear.	0		2 5	-	-	-	-
	3 5	-	-	-	-		3 5	W.	1	Clear.	0		3 5	SW.	2	C. K.	6
	4 5	N. NW.	2	Clear.	0		4 5	SW.	1	Clear.	0		4 5	SW.	2	C. K.	6
	6 5	NW.	1	Clear.	0		6 5	SW.	1	S.	1		6 5	W.	2	K.	6
	8 5	NW.	1	Clear.	0		8 5	W.	1	Clear.	0		8 5	W.	1	K.	8
	9 5	NW.	1	Clear.	0		9 5	W.	1	Clear.	0		9 5	W.	1	C. K.	9
	10 5	NW.	1	Clear.	0		10 5	W.	1	Clear.	0		10 5	-	-	-	-

REMARKS.

October 22. Commenced raining at 5. 30 a. m. Amount, 0. 580 inch.
23. Light rain at 1. 30 p. m.
25. The aurora borealis appeared from 11 p. m. last night to 1 a. m ; light luminous haze on the horizon, with a few beams extending to an altitude of 20°.
26. Commenced raining at 7. 40 p. m.; raining at midnight. Amount of rain during the showers, 0. 024 inch.

Hosted by Google

Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.
1861.	h. m.				
Oct. 31	0 5	NW.	1	Clear.	0
	2 5	NW.	1	Clear.	0
	3 5	NW.	1	Clear.	0
	4 5	NW.	1	Clear.	0
	6 5	NW.	1	S.	2
	8 5	NW.	1	Clear.	0
	9 5	W. NW.	1	C.	1
	10 5	-	-	-	-
	Noon.	-	-	-	-
	2 5	-	-	-	-
	3 5	W.	1	C.	1
	4 5	-	-	-	-
	6 5	W.	1	C. S.	2
	8 5	NW.	1	Clear.	0
	9 5	NW.	1	Clear.	0
	10 5	NW.	1	Clear.	0
Nov. 1	0 5	W.	1	Clear.	0
	2 5	NW.	1	Clear.	0
	3 5	NW.	1	Clear.	0
	4 5	NW.	1	Clear.	0
	6 5	NW.	1	C. S.	4
	8 5	NW.	1	C. S.	4
	9 5	NW.	1	C.	2
	10 5	NE.	2	C.	2
	Noon.	E.	2	C. K.	4
	2 5	-	-	-	-
	3 5	SE.	2	C. K.	10
	4 5	NE.	2	K.	10
	6 5	NE.	2	K.	10
	8 5	NE.	2	N.	10
	9 5	NE.	2	N.	10
	10 5	NE.	1	N.	10
Nov. 4	0 5	W.	1	C. S.	2
	2 5	W.	1	C. K.	4
	3 5	W.	2	C. K.	3
	4 5	W.	3	C. K. S.	3
	6 5	W.	3	C. K. S.	3
	8 5	W.	3	C. K. S.	9
	9 5	SW.	2	C. K. S.	7
	10 5	NW.	2	C. K. S.	8
	Noon.	-	-	-	-
	2 5	W.	2	C.	3
	3 5	SW.	2	C.	3
	4 5	NW.	1	Clear.	0
	6 5	NW.	3	S.	1
	8 5	NW.	1	S.	1
	9 5	NW.	1	C. S.	2
	10 5	NW.	1	C. S.	1

Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.
1861.	h. m.				
Nov. 2	0 5	NE.	4	N.	10
	2 5	NE.	6	N.	10
	3 5	NE.	5	N.	10
	4 5	NE.	6	N.	10
	6 5	NE.	5	N.	10
	8 5	E.	6	N.	10
	9 5	E.	6	N.	10
	10 5	E.	6	N.	10
	Noon.	SE.	8	N.	10
	2 5	SE.	8	N.	10
	3 5	SE.	8	N.	10
	4 5	E. SE.	8	N.	10
	6 5	S. by E.	2	N.	10
	8 5	S.	1	K. S.	2
	9 5	SE.	2	K.	10
	10 5	SE.	1	C. K. S.	8
Nov. 5	0 5	NW.	1	C. S.	2
	2 5	W.	1	S.	1
	3 5	W.	1	Clear.	0
	4 5	W.	1	Clear.	0
	6 5	NW.	1	C. S.	4
	8 5	SW.	1	C. S.	4
	9 5	SW.	1	C. S.	4
	10 5	S. by E.	1	C. K.	10
	Noon.	S.	1	C. K.	10
	2 5	S.	1	C. K.	10
	3 5	S.	2	C. K.	8
	4 5	S.	1	C. K.	3
	6 5	Calm.	0	C. S.	2
	8 5	Calm.	0	C.	3
	9 5	N.	1	C.	4
	10 5	N.	1	C. K.	6

Day.	Hour.	Wind. Direction	Wind. Force.	Weather.	Portion cloudy.
1861.	h. m.				
Nov. 3	0 5	NW.	3	C. S.	2
	2 5	NW.	2	S.	1
	3 5	NW.	1	Clear.	0
	4 5	NW.	1	Clear.	0
	6 5	W.	1	S.	1
	8 5	W. NW.	1	S.	1
	9 5	W. NW.	3	C. K. S.	4
	10 5	NW.	4	C. K. S.	9
	Noon.	W. NW.	4	C. K. S.	8
	2 5	NW.	2	C. K. S.	8
	3 5	W.	3	C. K. S.	9
	4 5	W.	1	C. K.	10
	6 5	W.	1	C. K. S.	8
	8 5	W.	1	S.	1
	9 5	W.	1	C. S.	4
	10 5	NW.	1	C. K.	8
Nov. 6	0 5	NE.	1	K.	10
	2 5	NE.	1	K.	10
	3 5	NE.	1	N.	10
	4 5	NE.	1	N.	10
	6 5	SW.	1	N.	10
	8 5	S. SE.	1	N.	10
	9 5	S.	1	N.	10
	10 5	SW.	1	K.	10
	Noon.	W. NW.	6	C. K.	9
	2 5	-	-	-	-
	3 5	NW.	5	N.	10
	4 5	NW.	6	N.	10
	6 5	NW.	7	N. S.	9
	8 5	NW.	4	N.	10
	9 5	NW.	6	C. K.	10
	10 5	NW.	6	S.	2

REMARKS.

November 1. Raining at 5. 20 p. m.
2. Continued raining until evening. Amount of rain during the storm, 2. 480 inches.
3. Light rain at 4. 20 p. m.
5. Light rain at 11 p. m.
6. Commenced raining at 2. 15 a. m. and at intervals during the day.

Hosted by Google

Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy	Day.	Hour.	Wind. Direction.	Wind. Force	Weather.	Portion cloudy.	Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.
1861.	h. m					1861.	h. m					1861.	h. m.				
Nov. 7	0 5	NW.	4	Clear.	0	Nov. 8	0 5	NW.	1	Clear.	0	Nov. 9	0 5	N.NE.	1	C.	7
	2 5	NW.	4	Clear.	0		2 5	W.	1	C.	1		2 5	NW.	1	C. K.	8
	3 5	NW.	4	Clear.	0		3 5	W.	1	C.	1		3 5	NW.	1	C. K.	6
	4 5	NW.	4	Clear.	0		4 5	W.	1	C.	1		4 5	NW.	1	C. K.	8
	6 5	NW.	4	S.	1		6 5	W.	1	C. K. S.	4		6 5	NW.	1	C. K.	10
	8 5	NW.	2	S.	1		8 5	SW.	1	C. K.	6		8 5	NW.	1	C. K.	10
	9 5	NW.	2	C. S.	1		9 5	E.	1	C. K.	10		9 5	NW.	1	C. K.	10
	10 5	NW.	4	C. K.	8		10 5	S.	1	C. K.	9		10 5	N. by W.	2	C. K.	9
	Noon.	-	-	-	-		Noon.	-	-	-	-		Noon.	NW.	3	C. K.	10
	2 5	-	-	-	-		2 5	-	-	-	-		2 5	NW.	2	N.	10
	3 5	NW.	3	C. K. S.	3		3 5	-	-	-	-		3 5	NW.	2	N.	10
	4 5	NW.	3	C. S.	2		4 5	S.	1	C. K.	8		4 5	NW.	1	N.	10
	6 5	NW.	1	Clear.	0		6 5	E.NE.	2	Clear.	0		6 5	NW.	2	K.	10
	8 5	NW.	1	Clear.	0		8 5	NE.	1	Clear.	0		8 5	NW.	2	K.	10
	9 5	NW.	1	Clear.	0		9 5	NE.	1	Clear.	0		9 5	NW.	2	C. K.	9
	10 5	NW.	1	Clear.	0		10 5	NE.	1	C.	1		10 5	N.	1	C. S.	3
Nov. 10	0 5	NW.	1	S.	1	Nov. 11	0 5	SE.	2	K.	10	Nov. 12	0 5	N.NW.	1	Clear.	0
	2 5	NW.	1	C. S.	2		2 5	SE.	2	K.	10		2 5	N.NW.	1	Clear.	0
	3 5	NW.	2	C. S.	3		3 5	SE.	2	K.	10		3 5	N.NW.	1	Clear.	0
	4 5	NW.	1	Clear.	0		4 5	SE.	2	K.	10		4 5	N.NW.	1	Clear.	0
	6 5	NW.	1	S.	1		6 5	S.	3	K.	10		6 5	N.NW.	1	Clear.	0
	8 5	NW.	1	C. K.	7		8 5	S.	4	K.	10		8 5	NW.	1	Clear.	0
	9 5	NW.	1	C. S.	4		9 5	S SW.	3	K.	10		9 5	NW.	1	Clear.	0
	10 5	-	-	-	-		10 5	S.	3	K.	10		10 5	-	-	-	-
	Noon.	S.	1	S.	1		Noon.	SW.	3	C. K.	9		Noon.	NW.	1	Clear.	0
	2 5	SE.	1	C.	2		2 5	SW.	2	C. K.	10		2 5	W.	1	S.	1
	3 5	SE.	1	C.	4		3 5	-	-	-	-		3 5	W.	1	S.	1
	4 5	SE.	1	C.	10		4 5	-	-	-	-		4 5	NW.	1	C. S.	2
	6 5	S.	1	C. K. S.	10		6 5	NW.	1	C. S.	3		6 5	NW.	1	Clear.	0
	8 5	S.	1	C. K.	10		8 5	NW.	1	C. S.	1		8 5	NW.	1	C. K.	9
	9 5	S.	1	C. K.	10		9 5	NW.	1	S.	1		9 5	NW.	1	C. K.	10
	10 5	S.SE.	1	C. K.	8		10 5	NW.	1	Clear.	0		10 5	NW.	1	C. K.	3
Nov. 13	0 5	NW.	1	C. K.	6	Nov. 14	0 5	NW.	1	C. K.	6	Nov. 15	0 5	SE.	1	K.	10
	2 5	NW.	1	Clear.	0		2 5	NW.	1	C.	3		2 5	E.	1	N.	10
	3 5	W.	1	Clear.	0		3 5	N.	1	C.	1		3 5	E.	1	N.	10
	4 5	W.	1	Clear.	0		4 5	N.	1	C.	1		4 5	NE.	2	N.	10
	6 5	W.	1	Clear.	0		6 5	N.	1	C.	2		6 5	NE.	3	N.	10
	8 5	NW.	1	C.	4		8 5	N.NW.	1	C. S.	2		8 5	NE.	1	K.	10
	9 5	SE.	1	C.	4		9 5	NW.	1	C. K.	6		9 5	N. by W.	1	K.	10
	10 5	SE.	1	C.	4		10 5	N.	1	C. K.	6		10 5	N. by W.	1	K.	10
	Noon.	-	-	-	-		Noon.	SE.	1	K.	10		Noon.	N.	1	N.	10
	2 5	-	-	-	-		2 5	-	-	-	-		2 5	-	-	-	-
	3 5	-	-	-	-		3 5	SE.	1	N.	10		3 5	N.NW.	1	C. K.	10
	4 5	-	-	-	-		4 5	S.	1	N.	10		4 5	N.NW.	2	C. K.	10
	6 5	SE.	1	C.	1		6 5	S.SW.	1	N.	10		6 5	NW.	1	C. K.	5
	8 5	S	1	C. K.	4		8 5	S.	1	N.	10		8 5	W.	1	C. K.	6
	9 5	W.	1	C. K.	7		9 5	S.	1	N.	10		9 5	NW.	1	C. K.	4
	10 5	NW.	1	C.	2		10 5	S.	1	N.	10		10 5	NW.	1	C. K.	10

REMARKS.

November 9. Commenced raining at 12.15 p m. Amount of rain, 0 400 inch.
14. Commenced raining at 3 p. m. Amount of rain included in measurement of the next day.
15. Continued raining, with lightning, until 6 a. m. Amount of rain, 0.520 inch.

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METEOROLOGICAL OBSERVATIONS.

Day.	Hour.	Wind. Direction	Wind. Force.	Weather.	Portion cloudy
1861. Nov. 16	h. m.				
	0 5	NW.	1	C. K.	10
	2 5	NW.	3	C. K.	8
	3 5	NW.	3	C. K.	6
	4 5	NW	4	C. K. S.	8
	6 5	NW.	4	C. K. S.	8
	8 5	N.NW.	4	C. K. S.	3
	9 5	NW.	6	C. S.	2
	10 5	NW.	7	C.	3
	Noon.	NW.	8	C.	2
	2 5	NW.	8	C. K.	9
	3 5	-	-	-	-
	4 5	NW.	6	C. K.	10
	6 5	NW.	5	C. K.	9
	8 5	NW.	4	C. K. S.	4
	9 5	NW.	4	C. K. S.	3
	10 5	NW.	3	C. K. S.	2
Nov. 19	0 5	NW.	2	Clear.	0
	2 5	NW.	1	Clear.	0
	3 5	NW.	1	Clear.	0
	4 5	NW.	1	Clear.	0
	6 5	NW.	1	Clear.	0
	8 5	NW.	1	Clear.	0
	9 5	NW.	2	Clear.	0
	10 5	NW.	3	Clear.	0
	Noon.	NW.	3	C.	1
	2 5	NW.	2	C.	1
	3 5	NW.	2	C.	2
	4 5	N.NE.	2	C.	3
	6 5	NW.	1	S.	1
	8 5	NW.	1	Clear.	0
	9 5	NW.	1	Clear.	0
	10 5	NW.	1	Clear.	0
Nov. 22	0 5	NW.	1	C. K.	8
	2 5	NW.	2	Clear.	0
	3 5	NW.	1	Clear.	0
	4 5	NW.	1	Clear.	0
	6 5	NW.	1	Hazy.	0
	8 5	NW.	1	C.	0
	9 5	-	-	-	-
	10 5	S.	1	Hazy.	0
	Noon.	SE.	1	C. K.	4
	2 5	SE.	1	C. K.	6
	3 5	SE.	1	C. K.	9
	4 5	E.	1	C. K.	9
	6 5	E.	1	C. S.	10
	8 5	E.	1	K.	10
	9 5	E.	1	C. K.	10
	10 5	NE.	1	N.	10

Day.	Hour.	Wind. Direction	Wind. Force.	Weather.	Portion cloudy
1861. Nov. 17	h. m.				
	0 5	NW.	3	C. K. S.	8
	2 5	NW.	2	C. K.	10
	3 5	NW.	2	C. K.	8
	4 5	NW.	1	C. K.	10
	6 5	NW.	1	C. K.	10
	8 5	NW.	2	C. K.	9
	9 5	NW.	2	C. K.	8
	10 5	NW.	3	C. K.	8
	Noon.	NW.	3	C. K.	7
	2 5	W.	4	C. K.	7
	3 5	W NW.	3	C. K.	3
	4 5	NW.	2	C. S.	2
	6 5	NW.	1	C. S.	6
	8 5	NW.	4	C. S.	4
	9 5	NW.	4	C. S.	8
	10 5	NW.	4	C. K.	10
Nov. 20	0 5	NW.	1	Clear.	0
	2 5	NW.	1	C. K.	4
	3 5	NW.	1	C. K.	3
	4 5	NW.	1	C. K.	3
	6 5	NW.	1	C. K. S.	7
	8 5	NE.	1	C. K.	8
	9 5	NE.	1	C. K.	10
	10 5	NE.	1	C. K.	10
	Noon.	SW.	1	C. K.	10
	2 5	-	-	-	-
	3 5	S.	1	C. K.	6
	4 5	S.	1	C. K.	7
	6 5	SE.	1	K.	10
	8 5	SE.	1	K.	10
	9 5	E. SE.	1	K.	10
	10 5	E.SE.	1	K.	10
Nov. 23	0 5	SE. by S.	1	K.	10
	2 5	S.	2	K.	10
	3 5	S.	1	N.	10
	4 5	S.	1	N.	10
	6 5	S.	1	N.	10
	8 5	NW.	3	N.	10
	9 5	NW.	3	K.	10
	10 5	NW.	4	N.	10
	Noon.	NW.	4	C. K.	3
	2 5	-	-	-	-
	3 5	NW.	3	C.	1
	4 5	NW.	2	S.	1
	6 5	W.	1	S.	1
	8 5	NW.	4	K.	10
	9 5	NW.	1	K.	10
	10 5	NW.	1	K.	4

Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.
1861. Nov. 18	h. m				
	0 5	NW	3	C. K.	4
	2 5	NW.	3	C. S.	3
	3 5	NW.	4	C. S.	2
	4 5	NW.	4	C. S.	2
	6 5	NW.	4	C. S.	1
	8 5	NW.	3	C.	2
	9 5	NW.	3	C.	6
	10 5	NW.	4	C. K.	6
	Noon.	NW.	5	C. K.	8
	2 5	-	-	-	-
	3 5	NW.	3	C.	2
	4 5	NW.	4	C. S.	1
	6 5	NW.	3	C. S.	1
	8 5	NW.	3	Clear.	0
	9 5	NW.	3	S.	1
	10 5	NW.	3	S.	1
Nov. 21	0 5	NE.	1	K.	10
	2 5	NE.	1	K.	10
	3 5	N.	1	K.	10
	4 5	NW.	1	K.	10
	6 5	NW.	1	K.	10
	8 5	NW.	1	C.	3
	9 5	NW.	1	C.	3
	10 5	NW.	1	C.	3
	Noon.	-	-	-	-
	2 5	-	-	-	-
	3 5	N.NW.	2	C. K.	8
	4 5	NW.	2	C. K.	4
	6 5	NW.	1	S.	1
	8 5	NW.	1	Clear.	0
	9 5	NW.	1	Clear.	0
	10 5	NW.	1	Clear.	0
Nov. 24	0 5	NW.	1	S.	1
	2 5	SW.	1	C.	3
	3 5	SW.	1	C.	2
	4 5	SW.	1	C.	4
	6 5	N.	1	C. K. S.	9
	8 5	S.	1	C. K.	9
	9 5	S.	1	C. K.	10
	10 5	S.	1	C. K.	8
	Noon.	S.SW.	2	C. K.	6
	2 5	W.	2	C. K.	10
	3 5	N NW.	1	K.	10
	4 5	N.NW.	1	K.	10
	6 5	N NW.	1	N.	10
	8 5	N.NW.	1	K.	10
	9 5	N.NW.	1	K.	10
	10 5	N.NW.	1	K.	10

REMARKS.

November 22. Commenced raining at 9.15 p. m. Amount included in next day's measurement.
23. Commenced raining at 2.40 a. m.; snowing lightly at 10.5 a. m.; raining at 8.20 p. m. Amount of rain, 0.410 inch.
24. Rain and snow at 6 p. m. until midnight.

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Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.
1861.	h. m.					1861	h. m.					1861.	h. m.				
Nov. 25	0 5	W.	1	N.	10	Nov. 26	0 5	NW.	1	C.	2	Nov. 27	0 5	NW.	2	Clear.	0
	2 5	SW.	1	K.	10		2 5	NW.	1	C. K.	4		2 5	NW.	2	Clear.	0
	3 5	SW.	1	C. K.	8		3 5	NW.	1	C. K.	7		3 5	-	-	-	-
	4 5	SW.	1	C. S.	4		4 5	NW.	1	C. S.	1		4 5	-	-	-	-
	6 5	SW.	1	S.	1		6 5	NW.	1	S.	1		6 5	SW.	1	C. S.	8
	8 5	SW.	1	C. K.	3		8 5	NW.	1	C. K.	6		8 5	S.	1	K.	10
	9 5	SW.	2	C. K.	8		9 5	S.SW.	2	C. K.	2		9 5	-	-	-	-
	10 5	W.	2	C. K.	9		10 5	NW.	3	C. K.	8		10 5	-	-	-	-
	Noon.	W.	2	C. K.	10		Noon.	NW.	3	C. K.	8		Noon.	S.	2	N.	10
	2 5	S.SW.	2	C. K.	10		2 5	NW.	2	C. K.	4		2 5	-	-	-	-
	3 5	S.SW.	1	C. K.	10		3 5	NW.	2	C. K.	4		3 5	-	-	-	-
	4 5	S.SW.	1	C. K.	10		4 5	NW.	2	C. K.	8		4 5	S.	1	K.	10
	6 5	S.SW.	1	C. K.	9		6 5	NW.	1	S.	1		6 5	S.	1	K.	10
	8 5	S SW.	1	C. K.	8		8 5	NW.	1	S.	1		8 5	SE.	1	K.	10
	9 5	NW.	1	C. K.	6		9 5	NW.	2	S.	1		9 5	SE.	1	K.	10
	10 5	NW.	1	C. K.	4		10 5	NW.	1	S.	1		10 5	SW.	1	C. K.	8
Nov. 28	0 5	W.	1	C. S.	2	Nov. 29	0 5	SE.	1	K.	10	Nov. 30	0 5	NE.	3	N.	10
	2 5	SW.	1	C. S.	1		2 5	E.	1	N.	10		2 5	N.	3	N.	10
	3 5	SW.	1	C. S.	2		3 5	E.	1	N.	10		3 5	N.	2	N.	10
	4 5	N.	1	C. S.	2		4 5	E.	1	K.	10		4 5	N.	3	N.	10
	6 5	N.	1	C. S.	8		6 5	S.	1	K.	10		6 5	N.	3	N.	10
	8 5	NW.	1	C. K.	10		8 5	S.SW.	1	K.	10		8 5	NW.	4	C. K. S.	10
	9 5	SE.	1	C. K.	8		9 5	S.	1	K.	10		9 5	W.NW.	4	C. K.	10
	10 5	-	-	-	-		10 5	S.	3	C. K.	10		10 5	-	-	-	-
	Noon.	-	-	-	-		Noon.	SW.	2	C. K.	9		Noon.	-	-	-	-
	2 5	SE.	1	C. K.	6		2 5	SW.	2	C. K.	9		2 5	-	-	-	-
	3 5	SE.	1	K.	10		3 5	-	-	-	-		3 5	-	-	-	-
	4 5	SE.	1	K.	10		4 5	S.	1	K.	10		4 5	NW.	3	C. K.	3
	6 5	SE.	1	N.	10		6 5	S.	1	N.	10		6 5	NW.	2	Clear.	0
	8 5	SE.	1	N.	10		8 5	W.	1	N.	10		8 5	NW.	2	Clear.	0
	9 5	E.	1	K.	10		9 5	NW.	1	N.	10		9 5	NW.	1	Clear.	0
	10 5	NE.	1	K.	10		10 5	NE.	1	N.	10		10 5	NW.	1	Clear.	0
Dec. 1	0 5	NW.	1	C.	1	Dec. 2	0 5	W.	2	K.	9	Dec. 3	0 5	N.	3	C. K.	8
	2 5	W.	1	C. S.	3		2 5	NW.	2	K.	4		2 5	NW.	2	S.	1
	3 5	SW.	1	C. K.	8		3 5	NW.	2	C. K.	4		3 5	NW.	2	S.	1
	4 5	S.	1	K.	10		4 5	NW.	3	C. K.	3		4 5	NW.	2	S.	1
	6 5	SE.	1	K.	10		6 5	N.NW.	3	C. K. S.	6		6 5	NW.	2	S.	1
	8 5	S.	1	K.	10		8 5	NW.	4	C. K. S.	8		8 5	NW.	2	S.	1
	9 5	S.	2	K.	10		9 5	NW.	3	C. K. S.	9		9 5	NW.	3	Clear.	0
	10 5	S.	3	K.	10		10 5	NW.	2	C. K. S.	8		10 5	NW.	3	Clear.	0
	Nocn.	S.	2	K.	10		Noon.	N.NW.	2	C. K. S.	10		Noon.	NW.	3	C. K.	4
	2 5	S. by W.	2	K.	10		2 5	-	-	-	-		2 5	-	-	-	-
	3 5	S.	1	K.	10		3 5	-	-	-	-		3 5	NW.	3	C. K.	6
	4 5	S. SW.	1	K. S.	9		4 5	N.NW.	2	K.	10		4 5	NW.	4	C. K.	9
	6 5	S.	1	K.	10		6 5	N.	3	N.	10		6 5	NW.	3	C. S.	4
	8 5	S.	2	C. K.	5		8 5	N.	2	K.	10		8 5	NW.	2	Clear.	0
	9 5	SW.	3	K.	10		9 5	N.	2	K.	10		9 5	NW.	2	Clear.	0
	10 5	SW.	3	K.	10		10 5	N.	2	K.	10		10 5	NW.	1	Clear.	0

REMARKS.

November 27. Raining at noon. Amount during the day, 0. 080 inch.
28. Light rain from 6 to 8 p. m.
29. Rain between 4. 30 and 5 p. m.; again at 6 p. m.
30. Continued to rain until 6 a. m. Amount during the storm, 0. 800 inch.
December 2. Light fall of snow between 5 and 6 p. m.; not measurable.

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Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.
1861. Dec. 4	h. m. 0 5	NW.	2	Clear.	0
	2 5	NW.	1	Clear.	0
	3 5	NW.	1	Clear.	0
	4 5	NW.	1	Clear.	0
	6 5	NW.	1	C. S.	3
	8 5	NW.	1	C. S.	5
	9 5	NW.	1	C. S.	3
	10 5	SW.	1	C. K. S.	8
	Noon.	SE.	1	C. S.	2
	2 5	SE.	2	C. S.	2
	3 5	SE.	1	C. S.	3
	4 5	S.	1	S.	1
	6 5	S.	1	C. S.	1
	8 5	SW.	1	S.	1
	9 5	SW.	1	Clear.	0
	10 5	SW.	1	Clear.	0
Dec. 7	0 5	NW.	1	S.	1
	2 5	NW.	1	Clear.	0
	3 5	NW.	1	Clear.	0
	4 5	NW.	1	Clear.	0
	6 5	NW.	1	Foggy.	10
	8 5	NE.	1	Foggy.	10
	9 5	N NE.	1	Foggy.	10
	10 5	-	-	-	-
	Noon.	E.	1	Foggy.	10
	2 5	NE.	1	Foggy.	10
	3 5	NE.	1	C. K.	10
	4 5	NE.	1	C. K.	6
	6 5	N.	1	C.	2
	8 5	N.	1	C.	2
	9 5	E.	1	C. S.	4
	10 5	E.	1	C. S.	4
Dec. 10	0 5	S.	1	C.	1
	2 5	S.	1	C.	1
	3 5	S.	1	Foggy.	1
	4 5	S.	1	Foggy.	1
	6 5	S.	1	Foggy.	1
	8 5	SE.	1	K.	10
	9 5	S. by E.	1	K.	10
	10 5	S. by E.	1	C.	4
	Noon.	S.	1	C.	3
	2 5	-	-	-	-
	3 5	S.	1	C.	2
	4 5	S.	1	C. S.	4
	6 5	S.	1	C. S.	3
	8 5	S.	1	C. K.	8
	9 5	S.	1	C. K.	10
	10 5	S.	1	C. K.	10

Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.
1861. Dec. 5	h. m. 0 5	SW.	1	Clear.	0
	2 5	Calm.	0	Clear.	0
	3 5	Calm.	0	Clear.	0
	4 5	W.	1	Clear.	0
	6 5	W.	1	Clear.	0
	8 5	W.	1	Clear.	0
	9 5	S SW.	1	Clear.	0
	10 5	S SE.	1	Clear.	0
	Noon.	SE.	1	Clear.	0
	2 5	SE.	1	Clear.	0
	3 5	SE.	1	Clear.	0
	4 5	SE.	1	C.	2
	6 5	Calm.	0	Clear.	0
	8 5	NW.	1	Clear.	0
	9 5	NW.	1	Clear.	0
	10 5	NW.	1	Clear.	0
Dec. 8	0 5	NW.	1	Foggy.	0
	2 5	NW.	1	Foggy.	0
	3 5	NW.	1	Foggy.	0
	4 5	NW.	1	Foggy.	0
	6 5	NW.	1	Foggy.	0
	8 5	NW.	1	Foggy.	0
	9 5	NW.	1	K.	10
	10 5	NW.	1	C. K.	8
	Noon.	E.	1	C. K.	4
	2 5	E.	1	C. K.	3
	3 5	SE.	1	C. K.	8
	4 5	SE.	1	C. S.	4
	6 5	S.SW.	1	C. K.	9
	8 5	S.	1	C. K.	9
	9 5	SW.	1	C. K.	4
	10 5	SW.	1	C. K.	3
Dec. 11	0 5	S.	1	C. S.	2
	2 5	S.	1	C. K.	6
	3 5	S.	1	C. K.	8
	4 5	S.	1	C. K.	8
	6 5	S.	1	C. K.	9
	8 5	W.	2	N.	10
	9 5	NW.	4	C. K.	6
	10 5	NW.	6	C. K.	9
	Noon.	NW.	6	C. K. S.	3
	2 5	-	-	-	-
	3 5	-	-	-	-
	4 5	NW.	4	C. S.	1
	6 5	NW.	2	Clear.	0
	8 5	NW.	1	Clear.	0
	9 5	NW.	2	Clear.	0
	10 5	NW.	1	Clear.	0

Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.
1861 Dec. 6	h. m. 0 5	NW.	1	Clear.	0
	2 5	NW.	1	Clear.	0
	3 5	NW.	1	Clear.	0
	4 5	NW.	1	Clear.	0
	6 5	NW.	1	S.	1
	8 5	N.	1	C. K.	10
	9 5	N.NW.	1	C. K.	8
	10 5	-	-	-	-
	Noon.	S.	1	C.	4
	2 5	E.	1	C.	3
	3 5	E.	1	C. S.	2
	4 5	E.	1	C. K. S.	2
	6 5	E.	1	C.	1
	8 5	N.NW.	1	Clear.	0
	9 5	N.NW.	1	Clear.	0
	10 5	N.NW.	1	Clear.	0
Dec. 9	0 5	NW.	1	C. S.	2
	2 5	W.	1	C. S.	2
	3 5	W.	1	S.	1
	4 5	W.	1	S.	1
	6 5	W.	1	S.	1
	8 5	W.	1	S.	2
	9 5	W.SW.	1	S.	2
	10 5	W.SW.	1	C.	2
	Noon.	W. by S.	1	C.	3
	2 5	W.	1	C.	3
	3 5	NW.	1	C.	3
	4 5	N.	1	C. S.	4
	6 5	N.	1	S.	1
	8 5	W.	1	C.	4
	9 5	NW.	1	C. S.	5
	10 5	SW.	1	C. S.	3
Dec. 12	0 5	NW.	1	Clear.	0
	2 5	NW.	1	Clear.	0
	3 5	NW.	1	Clear.	0
	4 5	NW.	1	S.	1
	6 5	NW.	1	S.	1
	8 5	NW.	1	Clear.	0
	9 5	NW.	1	S.	1
	10 5	SW.	1	C.	1
	Noon.	S.	1	C.	1
	2 5	S.	1	C. S.	2
	3 5	S.	1	C. S.	4
	4 5	S.	1	C. S.	4
	6 5	S.SW.	1	C. S.	1
	8 5	-	-	-	-
	9 5	-	-	-	-
	10 5	SW.	1	Clear.	0

REMARKS.

December 11. Shower of rain about 8 a. m.; not measurable.

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Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction	WIND. Force.	Weather.	Portion cloudy.
1861.	h. m.					1861	h. m					1861.	h. m.				
Dec. 13	0 5	NW.	1	Clear.	0	Dec. 14	0 5	W.	1	C.	1	Dec. 15	0 5	NW.	1	C. K.	9
	2 5	W.	1	Clear.	0		2 5	W.	1	C.	6		2 5	NW.	1	K.	10
	3 5	W.	1	Clear.	0		3 5	W.	1	C. S.	4		3 5	NW.	2	K.	10
	4 5	W.	1	Clear.	0		4 5	W.	1	C. S.	2		4 5	NW.	2	K.	10
	6 5	W.	1	Clear.	0		6 5	W.	1	C. S.	7		6 5	NW.	2	K.	9
	8 5	NW.	1	Clear.	0		8 5	SW.	1	C. S.	7		8 5	NW.	1	C. S.	7
	9 5	NW.	1	C. S.	1		9 5	-	-	-	-		9 5	NW.	2	C. S.	2
	10 5	W.	1	C. S.	1		10 5	-	-	-	-		10 5	N.	2	C. S.	2
	Noon.	SE.	1	C. S.	1		Noon.	SE.	1	C. S.	4		Noon.	N. NW.	3	Clear.	0
	2 5	-	-	-	-		2 5	SE.	1	C. K.	8		2 5	N. by E.	2	S.	1
	3 5	SE.	1	C.	1		3 5	S by E.	1	C. K.	5		3 5	N. NE.	1	S.	1
	4 5	SW.	1	Clear.	0		4 5	S. by W	1	C.	2		4 5	N. NE.	1	S.	1
	6 5	S.	1	Clear.	0		6 5	S by W.	1	S.	1		6 5	NW.	1	Clear.	0
	8 5	S.	1	S.	1		8 5	S. by E.	1	C. S.	2		8 5	NW.	1	C.	2
	9 5	S.	1	C.	2		9 5	W.	1	C. S.	1		9 5	NW.	1	C. S.	4
	10 5	W.	1	S.	1		10 5	-	-	-	-		10 5	NW.	1	C. S.	4
Dec. 16	0 5	NW.	1	C. S.	1	Dec. 17	0 5	W.	3	C.	3	Dec. 18	0 5	S. by W.	1	Clear.	0
	2 5	NW.	1	C. S.	1		2 5	W.	4	C.	4		2 5	S. by W.	1	Clear.	0
	3 5	NW.	1	C. S.	1		3 5	W.	4	C.	3		3 5	S. by W.	1	Clear.	0
	4 5	NW.	1	C. S.	1		4 5	W.	2	C.	2		4 5	SW.	1	C. S.	4
	6 5	NW.	1	C. S.	2		6 5	NW.	2	Clear.	0		6 5	SW.	1	C. S.	6
	8 5	S.	1	C.	2		8 5	SW.	1	Clear.	0		8 5	SW.	1	C. S.	6
	9 5	S.	1	C.	1		9 5	SW.	1	Clear.	0		9 5	S.	1	C. K.	8
	10 5	S.	1	S.	1		10 5	-	-	-	-		10 5	S.	1	C. K.	6
	Noon.	S.	1	C. S.	2		Noon	-	-	-	-		Noon.	SW.	1	C. K.	10
	2 5	-	-	-	-		2 5	-	-	-	-		2 5	W.	1	C. K.	9
	3 5	-	-	-	-		3 5	-	-	-	-		3 5	SW.	1	C. K.	9
	4 5	S.	2	C. S.	3		4 5	SE.	1	Clear.	0		4 5	SW.	1	C. K.	9
	6 5	SW.	1	C. S.	3		6 5	SE.	1	Clear.	0		6 5	W.	1	S.	2
	8 5	SW.	1	C.	5		8 5	S.	1	Clear.	0		8 5	W.	1	C.	2
	9 5	SW.	1	C.	4		9 5	S.	1	Clear.	0		9 5	W.	1	Clear.	0
	10 5	SW.	2	C. K.	3		10 5	S.	1	Clear.	0		10 5	NW.	1	C.	2
Dec. 19	0 5	W.	1	C. S.	4	Dec. 20	0 5	SE.	1	C. S.	2	Dec. 21	0 5	N.	3	C. K.	9
	2 5	W.	1	S.	2		2 5	SE.	1	C. S.	1		2 5	NE.	1	C. K.	8
	3 5	NW.	1	Clear.	0		3 5	SE.	1	C. S.	1		3 5	NE.	1	K.	10
	4 5	NW.	1	Clear.	0		4 5	SE.	1	C. S.	1		4 5	NE.	1	K.	10
	6 5	NW.	1	Clear.	0		6 5	SE.	1	C. S.	1		6 5	N.	1	C. S.	8
	8 5	W. NW.	1	Clear.	0		8 5	S. SE.	1	C. K.	4		8 5	N.	1	C. S.	4
	9 5	W. NW.	1	Clear.	0		9 5	SE.	1	C.	2		9 5	NW.	2	C. S.	2
	10 5	W. NW.	1	Clear.	0		10 5	S.	1	C.	6		10 5	NW.	3	C. S.	1
	Noon.	SE.	1	Clear.	0		Noon.	NW.	2	C. K.	9		Noon.	NW.	2	C. S.	1
	2 5	SE.	1	Clear.	0		2 5	NW.	4	C. K.	9		2 5	NW.	1	C. S.	1
	3 5	S.	1	C.	4		3 5	NW.	4	C. K. S.	9		3 5	NW.	1	C. S.	1
	4 5	S.	1	C. S.	4		4 5	NW.	4	C. K. S.	9		4 5	NW.	1	Clear.	0
	6 5	S.	1	C. S.	3		6 5	NW.	3	C. K. S.	6		6 5	N.	1	Clear.	0
	8 5	S.	1	C. S.	3		8 5	N.	2	C. K.	9		8 5	N.	1	Clear.	0
	9 5	SE.	1	C. S.	2		9 5	N.	1	C. K. S.	9		9 5	NW.	1	C.	1
	10 5	SE.	1	C. S.	4		10 5	N.	1	C. K. S.	8		10 5	NW.	1	C.	2

REMARKS.

December 13. Heavy white frost this morning.

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Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.
1861. Dec. 22	h. m				
	0 5	E. NE.	1	K.	10
	2 5	E. NE.	1	K.	10
	3 5	E. NE.	1	K.	10
	4 5	N.	1	C. K.	6
	6 5	N.	1	C. S.	10
	8 5	SE.	1	K.	10
	9 5	SE.	1	K.	10
	10 5	E.	1	K.	10
	Noon.	SE.	1	C. K.	10
	2 5	S. by E.	1	C. K.	10
	3 5	SE.	1	C. K.	10
	4 5	E.	1	C. K.	10
	6 5	NE.	1	K.	10
	8 5	NE	1	N.	10
	9 5	NE.	2	N.	10
	10 5	NE.	2	N.	10
Dec. 25	0 5	N.	1	K.	10
	2 5	N.	1	K.	10
	3 5	NW.	1	K.	10
	4 5	NW.	1	C. S.	6
	6 5	N.	1	C. S.	4
	8 5	NE.	1	C. S.	2
	9 5	E.	1	C. S.	1
	10 5	E. NE.	1	C. S.	2
	Noon.	E. NE.	1	C. S.	2
	2 5	SE.	1	C. S.	1
	3 5	SE.	1	C. S.	1
	4 5	SE.	1	C. S.	2
	6 5	E.	1	S.	1
	8 5	NE.	1	C. S.	3
	9 5	NE.	1	C. S.	2
	10 5	NE.	1	C. S.	2
Dec. 28	0 5	NW.	2	Clear.	0
	2 5	NW.	2	Clear.	0
	3 5	NW.	1	S.	1
	4 5	NW.	1	S.	1
	6 5	NW.	2	C. S.	2
	8 5	NW.	3	C. S.	8
	9 5	NW.	4	C. S.	8
	10 5	NW.	4	C. S.	6
	Noon.	N.	3	C. S.	4
	2 5	NW.	3	C. S.	6
	3 5	W.	3	C. S.	5
	4 5	W. NW.	1	C. K.	8
	6 5	NW.	1	C. S.	2
	8 5	NW.	1	C. S.	1
	9 5	NW.	1	C. S.	2
	10 5	NW.	1	C. K. S.	8

Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.
1861. Dec. 23	h. m.				
	0 5	N.	1	N.	10
	2 5	N.	1	N.	10
	3 5	NW.	1	N.	10
	4 5	NW.	1	N.	10
	6 5	NW.	1	N.	10
	8 5	SW.	1	N.	10
	9 5	SW.	1	N.	10
	10 5	W.	2	N.	10
	Noon.	NW.	1	N.	10
	2 5	NW.	4	N.	10
	3 5	-	-	-	-
	4 5	NW.	4	C. K.	10
	6 5	W. NW.	7	S.	1
	8 5	NW.	9	C. K.	4
	9 5	NW.	8	C. S.	2
	10 5	NW.	8	C. S.	2
Dec. 26	0 5	NE.	1	S.	1
	2 5	NE.	1	C. S.	1
	3 5	NE.	1	C. K.	4
	4 5	NE.	1	C. K.	10
	6 5	NE.	1	K.	10
	8 5	NE.	1	K.	10
	9 5	NE.	1	K.	10
	10 5	NE.	1	K.	10
	Noon.	-	-	-	-
	2 5	-	-	-	-
	3 5	SE.	1	C. K. S.	4
	4 5	SE.	1	C. K. S.	6
	6 5	SE.	1	C. K. S.	10
	8 5	SE.	1	C. K. S.	10
	9 5	SE.	1	C. S.	2
	10 5	SE.	1	C. S.	2
Dec. 29	0 5	NW.	1	C. S.	4
	2 5	NW.	1	C. K.	6
	3 5	NW.	1	C. K.	6
	4 5	NW.	1	C. K.	8
	6 5	NW.	1	C. K.	10
	8 5	SW.	1	C. K.	10
	9 5	W.	1	C. K.	10
	10 5	SE.	1	C. K.	10
	Noon.	S.	1	C. K.	10
	2 5	S.	1	C. S.	3
	3 5	S.	1	C. K. S.	6
	4 5	SE.	1	C. K. S	9
	6 5	SW.	1	C.	1
	8 5	W.	1	Clear.	0
	9 5	W.	1	C. S.	2
	10 5	W.	1	C. S.	2

Day.	Hour.	Wind. Weather.	Wind. Force.	Weather.	Portion cloudy.
1861. Dec. 24	h. m.				
	0 5	NW.	8	C. S.	3
	2 5	NW.	6	C. K.	3
	3 5	NW.	5	C. K.	3
	4 5	NW.	6	C. K.	4
	6 5	NW.	6	C. K. S.	3
	8 5	NW.	4	C. S.	1
	9 5	NW.	4	C. S.	2
	10 5	-	-	-	-
	Noon.	NW.	6	C. K.	6
	2 5	NW.	4	C. K.	7
	3 5	NW.	4	C. K. S.	8
	4 5	W. NW.	3	C. K. S.	7
	6 5	W. NW.	3	K. S.	2
	8 5	W. NW.	1	C. S.	1
	9 5	W. NW.	1	C. S.	4
	10 5	W. NW.	1	C. S.	3
Dec. 27	0 5	SE.	1	C. K.	5
	2 5	S.	1	C. K.	7
	3 5	SW.	1	C. K.	10
	4 5	W.	1	N.	10
	6 5	NW.	1	C. K.	9
	8 5	NW.	8	C. S.	4
	9 5	NW.	8	C. S.	4
	10 5	NW.	6	C. K. S.	4
	Noon.	NW.	5	C. K. S.	5
	2 5	NW.	4	C. K. S.	4
	3 5	-	-	-	-
	4 5	NW.	4	C. K. S.	2
	6 5	NW.	5	S.	1
	8 5	NW.	4	S.	2
	9 5	NW.	2	C. S.	2
	10 5	NW.	2	S.	1
Dec. 30	0 5	NW.	2	C. S.	3
	2 5	NW.	1	K.	10
	3 5	NW.	1	K.	10
	4 5	NW.	1	K.	10
	6 5	NW.	3	K.	10
	8 5	NW.	2	C. K. S.	7
	9 5	NW.	2	C. S.	3
	10 5	NW.	3	C. S.	2
	Noon.	-	-	-	-
	2 5	-	-	-	-
	3 5	NW.	3	Clear.	0
	4 5	NW.	2	Clear.	0
	6 5	NW.	2	Clear.	0
	8 5	NW.	1	Clear.	0
	9 5	NW.	1	Clear.	0
	10 5	NW.	1	Clear.	0

REMARKS.

December 22. Began raining at 6.45 p. m. Amount included in next day's measurement.
23. Continued raining until 2.10 p. m.; when snow fell for an hour. Amount of rain during the storm, 1.000 inch.
27. Slight fall of rain at 4 a. m.

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Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.
1861.	h. m.																
Dec. 31	0 5	NW.	2	Clear.	0												
	2 5	NW.	1	Clear.	0												
	3 5	W.	1	Clear.	0												
	4 5	W.	1	S.	1												
	6 5	NW.	1	C. S.	2												
	8 5	NW.	1	C. K. S.	7												
	9 5	N.NE.	1	C. K. S.	8												
	10 5	NE.	1	C. K.	6												
	Noon.	S.	1	C. K.	10												
	2 5	S.	1	C. K.	8												
	3 5	S.	1	C. K.	8												
	4 5	-	-	-	-												
	6 5	S.	1	C. S.	1												
	8 5	SE.	1	S.	1												
	9 5	SE.	1	Clear.	0												
	10 5	SE.	1	Clear.	0												

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METEOROLOGICAL OBSERVATIONS.

MEAN MONTHLY AND ANNUAL RESULTS.

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TABLE I.

Monthly means of barometric pressure.

Date.	0h. 5m.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.	Noon.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.
1861.	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°
January	30.019	30.057	30.051	30.052	30.055	30.069	30.086	30.084	30.086	30.045	30.031	30.023	30.029	30.037	30.031	30.043
February	29.996	29.996	29.997	29.998	30.003	30.023	30.026	30.032	30.008	29.980	29.952	29.994	29.990	29.998	30.002	30.002
March	29.981	29.982	29.980	29.984	29.995	30.017	30.021	30.010	29.990	29.946	29.964	29.959	29.973	29.993	30.003	29.991
April	29.918	29.913	29.916	29.906	29.922	29.921	29.916	29.906	29.909	29.888	29.847	29.832	29.835	29.905	29.888	29.899
May	29.869	29.864	29.868	29.872	29.888	29.893	29.865	29.949	29.874	29.879	29.877	29.832	29.805	29.852	29.869	29.881
June	29.898	29.886	29.889	29.893	29.905	29.918	29.919	29.912	29.897	29.862	29.860	29.849	29.852	29.864	29.895	29.881
July	29.899	29.894	29.894	29.898	29.913	29.929	29.923	29.956	29.928	29.899	29.887	29.871	29.859	29.883	29.895	29.896
August	29.952	29.947	29.946	29.947	29.971	29.977	29.991	29.990	29.969	29.963	29.950	29.952	29.921	29.951	29.962	29.960
September	29.972	29.975	29.976	29.980	29.998	30.012	30.005	30.039	30.012	29.954	29.958	29.938	29.942	29.966	29.976	29.982
October	29.986	29.979	29.980	29.984	30.002	30.021	30.019	30.010	29.998	29.972	29.976	29.961	29.967	29.978	29.981	29.998
November	29.868	29.859	29.849	29.851	29.866	29.885	29.883	29.858	29.835	29.820	29.827	29.828	29.848	29.861	29.866	29.866
December	30.155	30.154	30.154	30.155	30.162	30.183	30.195	30.186	30.157	30.145	30.172	30.139	30.153	30.145	30.146	30.164
Annual means	29.959	29.959	29.958	29.960	29.973	29.988	29.987	29.994	29.972	29.946	29.942	29.931	29.931	29.953	29.959	29.964

TABLE II.

Monthly means of dry thermometer.

Date.	0h. 5m.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.	Noon.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.
1861.	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°
January	29.40	28.79	28.44	27.94	27.68	28.52	30.60	31.89	36.50	38.43	38.82	37.32	33.22	31.13	30.43	30.05
February	35.84	34.71	34.32	33.82	33.50	35.54	38.52	41.58	46.24	47.35	47.35	47.57	42.22	39.77	38.57	37.93
March	42.11	40.64	39.66	38.89	38.81	41.29	44.02	46.12	50.62	54.74	52.48	53.03	48.29	44.69	43.07	43.20
April	47.77	46.77	45.66	45.38	46.38	51.86	55.23	57.43	59.48	57.82	62.63	60.85	57.84	52.43	51.33	49.98
May	53.60	52.27	51.26	50.48	52.85	59.45	60.80	61.79	70.29	72.00	70.96	70.13	66.70	60.10	58.38	56.58
June	68.30	67.11	66.42	65.92	67.22	72.57	75.39	77.90	83.07	85.12	82.57	82.88	78.81	72.65	70.48	70.10
July	68.23	66.77	66.08	65.74	67.12	72.79	75.60	78.00	84.07	84.50	83.83	83.63	78.96	72.82	71.46	70.33
August	70.00	69.37	68.98	68.55	68.92	73.58	76.37	80.00	83.15	83.67	83.64	82.05	77.50	72.60	71.50	70.40
September	64.67	63.75	63.00	62.12	62.05	66.53	70.07	71.88	77.05	79.06	79.50	78.54	72.15	68.37	66.64	65.80
October	55.58	54.84	54.18	53.47	53.66	56.77	59.59	61.66	68.95	67.60	68.25	67.90	60.78	58.31	57.27	56.34
November	42.03	40.92	40.57	40.00	39.58	41.55	45.00	48.81	51.72	54.29	51.89	50.21	46.18	43.90	43.28	42.93
December	33.56	32.89	32.94	32.69	32.44	33.10	35.98	38.23	43.29	45.91	46.26	44.60	38.65	36.27	35.57	34.60
Annual means	50.92	49.90	49.29	48.58	49.19	52.80	55.60	57.94	62.87	64.24	64.01	63.23	58.44	54.42	53.16	52.35

TABLE III.

Monthly means of wet thermometer.

Date.	0h. 5m.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m	Noon.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.
1861.	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°
January	28.03	28.40	28.34	28.11	27.93	28.43	29.32	29.83	33.62	35.18	35.29	34.11	31.35	30.03	28.97	28.68
February	33.93	33.26	32.72	32.26	31.81	34.40	36.10	38.33	40.30	41.24	41.21	41.96	39.13	37.20	36.29	35.66
March	38.58	36.62	36.17	35.37	35.25	37.30	39.45	40.59	43.91	47.41	45.19	45.67	42.74	40.81	39.57	39.70
April	44.87	43.88	42.97	42.57	43.07	46.47	48.34	50.29	51.23	50.36	55.05	53.50	51.97	48.62	47.60	46.83
May	50.31	49.00	48.27	48.02	49.10	53.13	54.91	55.06	60.90	61.54	62.07	61.29	59.59	55.75	54.60	52.77
June	64.66	63.43	62.50	62.05	63.13	66.02	67.87	69.55	72.89	73.80	72.64	73.07	70.96	67.30	66.41	65.90
July	64.22	63.02	62.23	62.23	63.21	66.42	67.91	69.16	73.09	72.38	73.62	73.97	71.27	67.50	66.50	65.70
August	66.76	66.15	65.63	65.23	65.67	68.82	70.10	73.15	74.83	75.30	75.20	74.17	72.19	69.03	68.26	67.33
September	61.91	60.80	60.08	59.33	59.30	61.92	64.26	63.71	68.59	69.72	70.71	70.12	66.67	64.67	63.34	62.80
October	52.81	51.90	51.15	50.50	50.61	52.52	53.66	55.00	61.00	59.35	60.38	60.10	56.72	55.16	54.26	53.48
November	39.67	38.69	38.47	37.77	37.36	38.72	40.56	42.69	45.61	47.41	45.43	44.95	42.65	41.33	40.78	40.48
December	32.34	32.19	32.04	32.38	32.74	32.58	33.64	34.50	38.39	39.93	40.46	39.83	35.96	35.06	34.41	34.46
Annual means	48.17	47.28	46.71	46.32	46.60	48.89	50.51	51.82	55.36	56.13	56.44	56.06	53.43	51.04	50.08	49.48

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TABLE IV.

Monthly means of sun thermometer.

Date.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.	Noon.	2h. 5m.	3h. 5m.	4h. 5m.	6h 5m.
1861.	°	°	°	°	°	°	°	°	°
January	- -	26.75	38.60	44.60	48.14	51.96	50.47	46.63	- -
February	- -	41.81	55.18	56.91	63.37	57.10	59.58	56.22	- -
March	- -	49.97	58.77	61.42	66.35	67.85	65.62	64.58	- -
April	49.13	73.85	78.31	84.25	87.00	89.67	91.07	81.04	70.35
May	55.00	79.37	86.67	85.91	84.71	86.62	86.72	80.52	76.03
June	68.64	92.32	99.84	100.03	98.02	98.13	100.81	98.17	88.32
July	66.95	91.18	97.80	100.27	98.45	97.77	98.28	98.02	89.64
August	66.45	90.41	97.67	104.00	101.00	102.50	101.45	99.89	87.90
September	- -	82.70	95.96	94.64	95.31	93.96	94.50	91.06	- -
October	- -	70.07	76.31	78.10	89.78	83.89	83.23	78.79	- -
November	- -	47.17	60.33	58.31	63.44	66.25	60.95	57.69	- -
December	- -	32.33	48.25	55.09	58.57	57.63	57.33	51.26	- -
Annual means	- -	64.83	74.47	76.96	79.51	79.44	79.17	75.32	- -

TABLE V.

Aggregate fall of rain during the year 1861.

Month.	Inches.
January	3.930
February	1.840
March	2.246
April	4.876
May	3.114
June	4.218
July	5.050
August	7.496
September	2.358
October	3.511
November	4.690
December	1.000
Annual amount	44.329

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TABLE VI.

Showing the number of times in each month that the wind blew from the north at the hours of observation.

Time.	0h. 5m.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.	Noon.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.
January	5	5	5	4	4	5	5	3	2	3	2	4	6	6	7	7
February	0	3	2	1	0	1	3	2	1	1	1	1	1	2	0	1
March	6	4	4	4	4	4	2	2	4	1	1	3	3	1	3	3
April	3	0	0	0	0	3	3	1	4	1	1	2	1	3	2	1
May	1	2	2	1	3	2	2	2	2	2	2	4	2	3	4	4
June	1	2	3	5	2	7	9	4	3	1	2	1	2	2	1	1
July	6	5	6	7	4	4	3	4	1	0	3	2	2	3	2	0
August	8	8	7	5	6	4	2	1	3	4	3	2	7	6	4	6
September	2	3	3	4	5	5	3	3	2	2	4	4	5	3	4	6
October	2	3	7	5	8	4	4	3	3	4	4	4	1	2	2	3
November	0	2	3	4	4	1	2	3	1	0	3	1	1	1	2	4
December	4	2	0	1	3	2	1	1	3	1	1	1	3	5	4	3
Sums	38	39	42	41	43	42	39	29	29	20	27	29	34	37	35	39

Showing the number of times in each month that the wind blew from the northeast at the hours of observation.

Time.	0h. 5m.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h 5m.	10h. 5m.	Noon.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.
January	6	6	4	4	5	5	4	5	5	3	1	1	3	2	1	3
February	4	2	2	3	3	3	3	2	3	2	2	2	3	2	4	3
March	1	3	2	2	2	3	3	2	1	1	3	2	1	3	5	4
April	4	6	7	7	5	6	3	3	1	2	1	2	4	4	4	6
May	2	4	3	4	5	5	3	3	3	1	1	3	2	3	1	2
June	3	4	5	3	4	4	4	2	4	2	2	4	4	4	4	3
July	0	0	1	1	1	1	2	1	0	0	1	2	2	3	3	3
August	4	5	4	4	4	9	11	4	4	2	4	6	6	7	5	3
September	0	1	2	4	4	6	5	2	0	0	0	1	1	1	2	1
October	2	4	1	1	1	5	5	2	3	3	3	3	4	5	5	2
November	4	3	2	3	2	2	1	2	0	0	0	2	0	2	2	4
December	1	3	2	2	1	3	2	2	0	1	1	1	2	2	2	2
Sums	31	41	35	38	37	52	46	30	24	17	19	29	32	38	38	36

Showing the number of times in each month that the wind blew from the east at the hours of observation.

Time.	0h. 5m.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.	Noon.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.
January	0	0	1	0	0	0	2	1	2	1	2	3	1	2	2	1
February	1	1	1	1	1	2	3	2	1	0	1	0	2	2	3	3
March	1	1	1	0	0	1	1	0	1	0	0	0	0	2	0	1
April	3	0	1	0	2	3	4	4	2	1	2	1	1	3	1	2
May	2	1	0	1	2	0	0	0	0	1	1	1	1	0	0	1
June	0	0	0	1	0	0	3	1	0	1	1	1	0	1	0	0
July	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0
August	0	0	1	1	1	2	2	3	2	3	5	4	1	2	2	2
September	3	3	2	2	0	0	1	1	1	1	0	0	1	3	2	1
October	2	1	2	2	2	0	0	0	1	0	1	1	0	0	1	2
November	0	2	2	1	0	1	2	1	1	0	0	1	2	1	2	0
December	1	0	1	0	0	0	1	2	2	2	1	2	2	0	1	1
Sums	13	9	12	9	8	9	19	15	14	10	14	15	12	16	14	14

In preparing these tables, whenever the wind has been recorded in the journal as N. NE., E. NE., E. SE , &c., the observations are divided equally between N. and NE., NE. and E., E. and SE , &c.

Observations as N. by E. are placed in the table most nearly coinciding with the direction.

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TABLE VI—Continued.

Showing the number of times in each month that the wind blew from the southeast at the hours of observation.

Time.	0h. 5m.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.	Noon.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m
January	2	2	1	2	2	0	1	0	2	1	3	2	1	0	1	1
February	2	2	2	2	2	1	0	4	3	6	4	5	3	3	2	3
March	1	2	3	4	1	3	6	2	2	3	4	4	5	4	4	4
April	2	3	2	3	2	1	4	4	5	3	6	6	6	4	5	3
May	0	0	1	0	0	3	3	4	7	3	5	3	7	4	4	2
June	1	2	2	1	1	1	1	1	3	4	4	2	2	1	1	0
July	0	1	1	1	1	3	3	2	4	1	4	5	3	3	3	2
August	3	1	1	1	1	0	4	6	5	3	2	4	3	2	4	4
September	4	2	2	0	2	1	0	1	2	3	3	3	2	1	1	1
October	4	2	1	1	1	2	1	1	3	2	3	6	5	6	5	3
November	4	1	1	1	0	0	2	1	3	4	6	3	3	3	3	3
December	2	1	1	1	2	2	2	2	6	5	7	6	2	2	3	3
Sums	25	19	18	17	15	17	27	28	45	38	51	49	42	33	36	29

Showing the number of times in each month that the wind blew from the south at the hours of observation.

Time.	0h. 5m.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.	Noon.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.
January	2	1	1	0	0	2	1	4	6	6	4	4	3	2	1	1
February	7	6	6	5	6	4	5	4	4	4	4	11	10	5	7	4
March	8	6	6	6	6	6	3	6	9	5	7	7	5	4	4	4
April	3	4	3	5	7	7	6	3	4	2	2	6	5	4	5	5
May	5	4	3	2	3	4	1	2	2	2	3	4	2	3	3	4
June	8	5	7	8	4	6	5	5	8	5	6	8	9	9	7	6
July	4	5	4	3	5	4	4	3	7	4	6	6	6	8	5	5
August	4	5	5	5	7	5	4	2	8	5	5	6	5	7	5	4
September	4	4	4	5	6	5	4	7	8	8	11	10	10	6	5	4
October	1	1	1	2	3	2	6	3	6	3	2	5	3	4	2	4
November	0	1	1	1	3	4	3	5	3	1	2	6	4	4	2	1
December	3	4	3	3	2	3	4	5	7	5	7	7	7	7	3	2
Sums	49	46	44	45	52	52	46	49	72	50	59	80	69	63	49	44

Showing the number of times in each month that the wind blew from the southwest at the hours of observation.

Time.	0h. 5m.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.	Noon.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.
January	1	2	1	3	2	3	3	3	0	0	2	1	3	3	0	0
February	2	4	2	2	0	2	4	1	2	3	3	2	0	4	0	0
March	1	2	2	1	4	3	5	3	1	3	0	0	1	0	0	1
April	6	4	4	5	4	2	3	1	1	2	2	3	2	2	3	3
May	3	3	3	2	3	5	4	3	2	1	1	4	3	2	1	1
June	6	3	1	1	4	4	4	4	2	0	3	7	6	5	5	8
July	7	3	3	5	3	3	2	2	5	0	2	5	5	4	5	5
August	2	2	1	2	2	1	1	0	1	0	1	3	1	2	2	2
September	2	0	0	1	0	2	3	0	0	2	1	3	3	4	2	2
October	6	6	6	5	2	3	3	2	1	2	4	2	5	2	3	2
November	0	2	4	2	3	4	7	1	4	3	2	1	2	1	0	1
December	1	0	2	1	1	5	4	2	1	0	1	2	4	2	4	6
Sums	37	31	29	30	28	37	43	22	20	16	22	33	35	31	25	31

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TABLE VI—Continued.

Showing the number of times in each month that the wind blew from the west at the hours of observation.

Time.	0h. 5m.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.	Noon.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.
January	0	0	3	1	2	5	5	1	4	2	3	2	2	2	4	2
February	1	2	4	4	6	2	4	5	7	3	2	1	2	4	4	4
March	2	4	3	4	3	4	3	2	5	4	4	5	5	4	2	2
April	2	1	3	2	5	2	4	2	4	3	1	2	4	3	1	1
May	0	5	4	7	3	2	2	2	7	2	0	5	4	2	3	1
June	2	4	3	3	3	1	0	1	2	3	1	3	3	5	4	5
July	3	6	6	5	6	2	3	1	5	2	3	2	3	0	1	3
August	3	3	3	2	1	1	0	0	0	1	1	2	2	1	1	1
September	1	4	4	2	1	2	2	2	2	1	3	1	0	2	4	4
October	0	1	2	3	4	3	3	1	1	2	2	3	3	5	3	1
November	4	3	4	4	4	2	0	1	3	4	3	1	2	3	3	0
December	4	4	5	7	4	3	1	3	1	2	1	2	2	4	4	3
Sums	22	37	44	44	42	29	27	21	41	29	24	29	32	35	34	27

Showing the number of times in each month that the wind blew from the northwest at the hours of observation.

Time.	0h. 5m.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.	Noon.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.
January	13	14	13	15	14	9	7	8	7	5	9	12	11	12	12	14
February	10	8	9	10	11	12	6	5	4	5	6	6	6	6	8	8
March	11	9	8	10	9	6	9	8	6	11	9	11	11	13	12	12
April	7	12	9	8	6	4	2	5	6	2	5	8	6	6	8	9
May	18	15	16	15	15	10	10	3	0	0	2	8	6	13	15	13
June	8	9	10	8	12	6	2	3	6	4	3	4	3	4	5	6
July	10	11	11	9	10	14	11	5	6	6	5	8	3	10	11	12
August	7	7	9	10	8	9	6	1	4	2	1	2	2	4	7	6
September	12	13	13	12	12	8	5	2	5	3	3	6	6	10	9	11
October	13	12	10	11	9	12	6	6	5	4	5	5	9	8	10	11
November	19	17	15	15	16	19	13	12	10	7	9	15	15	16	18	19
December	15	14	16	16	18	12	14	9	8	6	6	8	8	8	10	10
Sums	143	141	139	139	140	121	91	67	67	55	63	93	86	110	125	131

Showing the number of times in each month that it was calm at the hours of observation.

Time.	0h. 5m.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.	Noon.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.
January	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
February	2	1	1	1	0	0	0	0	1	0	0	0	0	0	0	0
March	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
April	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
June	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
July	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
August	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
September	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
October	2	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0
November	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
December	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0
Sums	6	5	5	2	0	0	0	0	1	0	0	0	1	0	0	0
													2	1	1	1

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TABLE VII.

The number of times it was clear at the hours of observation.

Time.	0h. 5m.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m	Noon.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m
January	3	4	8	7	3	2	4	2	6	3	2	4	1	7	8	7
February	8	8	7	6	4	4	4	1	1	0	0	1	3	7	7	9
March	5	3	2	2	2	5	6	5	3	3	3	4	3	7	6	6
April	4	4	4	5	4	2	1	1	2	1	0	0	2	3	6	6
May	14	16	16	12	11	10	4	3	1	2	2	4	6	4	9	12
June	2	3	4	4	3	1	1	0	1	0	0	1	2	0	0	4
July	3	5	6	5	4	2	3	2	1	0	1	0	0	1	5	4
August	7	9	8	3	3	5	5	2	0	0	0	1	1	3	4	8
September	9	5	6	5	4	4	1	1	0	0	1	1	3	7	8	8
October	11	10	11	7	5	8	5	2	3	1	1	4	4	9	8	9
November	7	7	8	9	4	2	2	1	1	0	0	1	4	6	5	5
December	8	9	9	6	4	5	4	3	3	2	2	4	7	8	9	9
Sums	81	83	89	71	51	50	40	23	22	12	12	25	36	62	75	87

The number of times cirrus clouds prevailed at the hours of observation.

Time.	0h. 5m.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.	Noon.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.
January	5	4	1	2	2	4	3	3	2	5	10	5	1	1	3	5
February	2	4	4	4	1	2	3	4	2	1	2	5	1	3	5	4
March	4	4	4	2	0	1	2	2	3	2	3	4	2	3	2	4
April	7	3	4	2	2	3	3	1	1	1	2	5	2	0	2	3
May	3	3	1	1	2	5	3	4	4	0	0	3	4	3	4	4
June	5	2	2	0	5	4	4	2	1	1	5	5	4	5	4	4
July	4	5	4	3	5	6	7	2	1	2	0	4	2	1	2	5
August	2	2	1	1	2	2	3	1	2	1	3	6	5	2	4	2
September	3	6	2	4	3	5	4	2	4	2	2	4	3	4	3	4
October	2	3	1	1	0	2	3	3	2	3	6	6	2	1	5	3
November	2	3	3	3	1	5	4	5	2	3	5	2	1	1	1	2
December	5	4	3	3	3	3	3	4	5	3	4	2	3	5	3	2
Sums	44	43	30	26	26	42	42	33	29	24	42	51	30	29	38	42

The number of times cirro-cumuli clouds prevailed at the hours of observation.

Time.	0h. 5m.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.	Noon.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.
January	5	8	8	6	4	3	5	5	8	3	6	7	1	0	3	4
February	6	4	5	6	5	8	10	10	16	13	13	10	5	4	4	5
March	13	11	12	8	4	9	10	9	15	17	15	17	12	6	7	6
April	4	5	6	8	5	8	12	10	13	7	10	17	14	6	5	8
May	4	4	7	8	8	7	7	6	16	6	8	16	8	4	4	4
June	9	9	11	11	11	17	14	14	21	15	11	19	15	6	7	11
July	10	8	8	6	9	9	11	10	21	9	20	19	16	7	3	8
August	6	6	6	6	10	8	7	6	17	13	12	11	5	4	6	4
September	5	7	12	8	8	8	7	7	16	12	18	19	8	6	7	9
October	8	8	9	9	6	10	11	3	7	8	10	12	4	9	8	9
November	5	6	7	3	2	8	10	12	14	10	9	11	3	5	8	8
December	4	5	7	6	3	3	4	5	8	7	8	7	2	6	2	3
Sums	79	81	98	85	75	98	108	97	172	120	140	165	93	63	64	79

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TABLE VII—Continued.

The number of times cirro-strati clouds prevailed at the hours of observation.

Time.	0h. 5m.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.	Noon.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m
January	2	0	0	2	5	7	2	1	1	1	2	5	10	5	2	0
February	1	2	1	1	4	2	2	2	1	2	0	1	5	2	1	0
March	2	5	4	5	7	5	3	3	1	1	1	1	5	4	4	4
April	2	2	3	4	4	2	2	1	0	0	0	0	2	1	3	1
May	0	1	1	3	3	0	1	0	0	1	0	0	2	5	2	0
June	1	2	2	5	1	2	0	1	2	1	2	1	2	5	6	2
July	4	2	2	4	5	7	3	2	2	1	1	2	1	7	7	3
August	4	2	3	4	0	1	2	0	0	0	0	0	0	5	2	3
September	1	1	1	2	6	4	4	4	1	0	0	0	4	3	2	0
October	2	0	0	4	6	2	3	2	0	2	1	0	7	2	1	1
November	4	3	3	4	5	3	4	0	0	0	0	4	4	2	3	2
December	8	5	3	5	9	9	9	6	7	6	6	8	8	5	12	9
Sums	31	25	23	43	55	44	35	22	15	15	13	22	50	46	45	25

The number of times cumulus clouds prevailed at the hours of observation.

Time.	0h. 5m.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.	Noon.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m
January	7	6	6	7	10	10	7	6	3	4	5	7	7	11	9	9
February	5	7	6	5	5	5	4	4	2	2	5	7	7	7	6	5
March	5	5	5	5	8	5	3	5	2	2	2	2	2	4	4	4
April	6	7	3	4	3	3	4	4	1	1	1	1	2	1	2	3
May	5	2	1	1	3	5	1	0	0	2	2	3	3	4	5	5
June	11	11	8	6	6	4	5	0	1	1	2	2	4	4	5	5
July	5	6	6	6	5	5	3	1	3	1	0	2	3	3	7	6
August	8	8	9	12	9	7	8	4	3	2	3	6	8	3	4	6
September	6	6	5	4	7	8	5	2	1	4	2	0	1	4	5	4
October	5	7	7	8	8	7	6	5	6	3	2	3	4	4	5	5
November	6	5	2	3	3	4	4	3	1	0	2	5	4	5	5	3
December	3	5	5	4	4	4	5	3	1	1	1	1	2	1	2	2
Sums	72	75	63	65	71	67	55	37	24	23	27	39	47	51	59	57

The number of times cumulo-strati clouds prevailed at the hours of observation.

Time.	0h. 5m.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.	Noon	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.
January	1	1	1	1	1	2	1	1	1	1	0	0	4	2	3	2
February	0	0	0	1	4	5	3	2	1	1	1	1	3	0	1	0
March	0	0	0	1	2	2	3	2	1	1	0	0	3	2	1	1
April	0	0	3	2	7	1	1	0	1	0	0	0	2	6	4	3
May	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
June	0	0	0	1	0	0	0	0	0	0	0	0	0	5	1	1
July	0	1	1	1	0	0	0	0	0	0	0	0	0	6	2	1
August	0	0	0	1	0	1	1	0	1	0	0	0	1	3	3	1
September	0	0	0	1	1	0	0	0	0	0	0	0	2	1	1	1
October	0	0	0	0	3	1	0	1	1	1	0	0	3	1	1	0
November	1	0	0	2	5	3	2	2	1	1	2	0	3	2	1	2
December	0	0	0	0	3	3	2	3	3	1	3	6	2	0	1	2
Sums	3	2	5	11	26	18	13	11	10	6	6	7	23	29	19	14

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TABLE VII—Continued.

The number of times stratus clouds prevailed at the hours of observation.

Time.	0h. 5m.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.	Noon.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m
1861.																
January	5	6	3	3	3	0	2	1	1	2	1	0	2	2	0	3
February	2	0	1	2	2	0	0	1	0	0	1	2	2	3	2	2
March	1	1	2	3	4	1	1	1	1	0	1	0	2	2	3	2
April	2	3	1	1	1	2	0	0	0	0	0	0	0	5	1	1
May	2	0	0	1	0	0	1	0	0	0	0	0	1	3	1	1
June	0	0	1	0	0	0	0	0	0	0	0	0	0	2	1	0
July	1	2	2	5	0	0	0	0	0	0	0	0	0	1	2	2
August	0	0	0	2	2	0	0	0	0	0	0	0	0	2	0	0
September	2	0	0	2	0	0	0	0	0	0	0	0	3	3	2	2
October	0	0	0	0	1	0	0	0	0	0	1	1	3	0	0	0
November	2	2	0	0	5	2	0	0	1	1	1	1	5	3	3	3
December	2	2	3	5	4	2	2	1	0	1	1	2	6	4	0	2
Sums	19	16	13	24	22	7	6	4	3	4	6	6	24	30	15	18

The number of times nimbus clouds prevailed at the hours of observation.

Time.	0h. 5m.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.	Noon.	2h. 5m.	3h. 5m.	4h. 5m.	6h. 5m.	8h. 5m.	9h. 5m.	10h. 5m.
1861.																
January	3	2	4	3	3	3	5	6	7	3	2	3	4	3	2	1
February	4	3	4	3	3	2	1	1	4	4	2	1	2	2	2	3
March	1	2	2	5	4	3	3	1	2	2	2	2	2	3	3	2
April	5	6	5	4	4	8	6	5	7	4	6	7	5	7	6	5
May	2	4	4	4	3	3	5	5	2	1	1	4	3	5	4	4
June	2	1	2	3	4	2	3	3	3	2	2	2	2	3	3	3
July	3	2	2	1	2	2	2	2	1	0	2	3	4	4	2	1
August	4	4	4	2	4	7	4	3	5	4	4	5	7	9	8	6
September	3	5	4	4	1	1	3	0	0	0	1	4	3	2	1	2
October	3	3	3	1	2	1	1	3	3	2	3	3	3	5	3	2
November	3	4	6	5	5	3	2	2	3	2	4	4	6	6	4	5
December	1	1	1	2	1	2	1	1	1	1	0	0	1	1	1	1
Sums	34	37	41	37	36	37	36	32	38	25	29	38	42	50	39	35

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